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# THE IRON AGE

Published Weekly
Vol. 117, No. 2

NEW YORK, N. Y., JANUARY 14, 1926
Entered as second-class matter June 18, 1879, at Post Office at New York under the Act of March 3, 1879

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# THE IRON AGE

New York, January 14, 1926

ESTABLISHED 1855 VOL. 117, No. 2


# Stampings Assembled by Welding

## Jigs Facilitate Operations and Assure Alinement to Close Limits, in One Case to 0.0005 In.— Press Work at Times More Economical

BY L. S. LOVE

WITH the marked growth in recent years of welding in its various forms has come the development of refinements in practice. Nearly all processes in the mechanical arts, as in other fields, have crude beginnings and are confined to the simplest forms, later developing into more finished and more dependable shapes, with wider applications.

In welding the first method was the simple process of heating two pieces of iron in a forge to fusing temperature and uniting them by hammer blows. In welds of this kind there was always a potential weakness due to prevalence of bits of the fuel, oxide, sulphur or other impurities in the weld, which tend to set up a progressive opening of the welded seam, sometimes resulting in failure of the welded part at a critical moment. Furthermore, this method of welding for some classes of work was slow, and therefore costly as reckoned by today's advanced practices, and was limited as to shapes of work and materials which could be welded.

Later developments in the simple form of welding were the use of gas, liquid fuels and electric heat in furnaces in place of charcoal, coal or coke in the forge.

In addition to this method of welding others have been devised which are faster, more economical and are dependable.

With research in the electrical field came the development of arc welding and the butt, spot and seam welding processes, working on the resistance principle. Refinement of apparatus for using acetylene or other gas and oil fuels brought the use of intense direct heat to fuse metal from a welding wire to two or more pieces to be joined.

With all of these later methods of welding it has been only in comparatively recent years that actual progress has been made in their use on other than the simplest forms of work, first in making repairs, later as parts of manufacturing processes.

Practically all of the above forms of welding are used in the plant of the Heintz Mfg. Co., Philadelphia, maker of stamped and assembled sheet metal goods, this company having applied these methods to the production of some pieces of unusual character. A special seam welding machine, for instance, has been developed by the Heintz company, in which the arc principle is utilized in the manufacture of automobile rear axle housings. The machine is covered by patents and the electrical equipment for it was furnished by the General Electric Co.

In addition to the development of welding equipment, a factor of importance in the production of difficult stamped and welded assemblies is the extensive use of jigs for holding pieces to be welded. The jigs not only facilitate rapid production in welding, but also are so made as to be fool-proof, counteracting to a large extent the human tendency toward error and permit of holding the finished piece to close limits of accuracy.

On some of the products of the Heintz company it

*Fig. 1 (left)—A Windshield Base Pressed from Sheet Steel. A forged reinforcing plate, used for attachment to the cowl, was welded into the pressed piece which contained also formed and welded sockets for stanchions*

*Fig. 2 (below)—A More Recent Form of Windshield Stanchion*

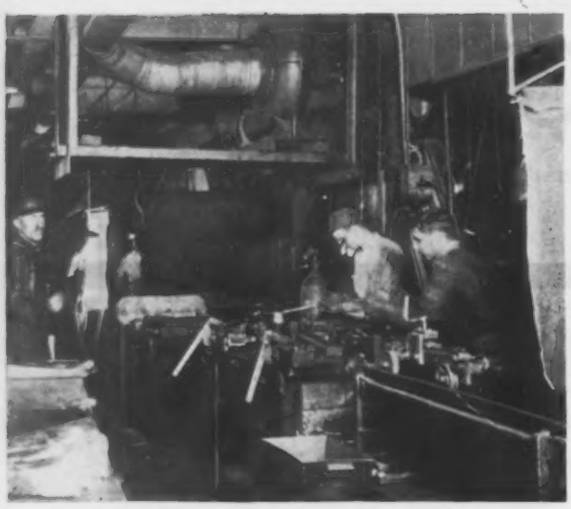


*Fig. 3—The Stanchion Shown in Fig. 2 Contains a Guide and Passage for a Tube Operating a Windshield Wiper. Gas seam welding is an important part of this assembly*

has been found desirable to defer final assembly until the work reaches destination, because of easier or less costly transportation when shipped knocked down. In such cases the customer has been tooled to effect the final assembly in a welding jig designed by the Heintz organization, or when welded assemblies are to be bolted together, they are so designed as to require a minimum number of bolts.

It is not the purpose of this article to dwell on the subject of welding per se, nor to set forth the relative merits of one form of weld as opposed to another, but rather to show what has been accomplished in the use of one or another of several forms of welding to assemble many pieces into a whole and still maintain machining accuracy, or an accuracy equal to the common commercial acceptance of that term in the machine shop. To accomplish these results pieces may be entirely welded by one method, or several methods may be employed. Many of the pieces replace castings, wood, or parts made of material other than pressed steel.

### Welded Windshield Base Replaces Die Casting

The first really difficult job, the success of which led to the development of a number of the others, was a windshield base shown in Fig. 1, which replaced a

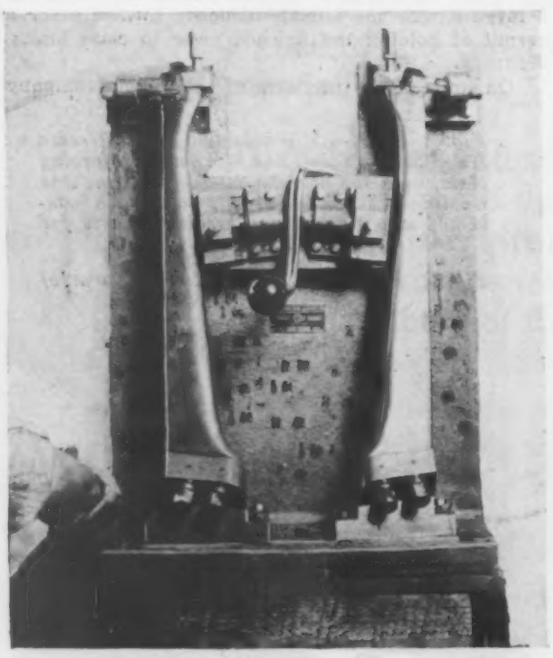


*Fig. 4—Inspection Tolerances on the Windshield Stanchion Shown in Fig. 2 Are Rigid*

die casting of aluminum base alloy. In this case, as in all other developments, a hand-made sample was first produced to make sure of the practicability of the piece as made from sheet steel before incurring the expense of making dies. The hand-made model was put through tests for accuracy and rigidity to determine its fitness to sustain the loads to be carried by it. The illustration of this part shows, from left to right, the various steps of forming, trimming, bending, etc., leading up to the welding, in which forged reinforcing plates to take tapped holes were welded into the pressed piece. The entire assembly was required to conform to cowl contour and also to furnish the correct angle for the stanchion anchor holes. This work was done by gas welding. A more recent form of windshield stanchion, shown in Fig. 2, contains a guide and a passage for a tube operating an automatic windshield wiper. Gas seam welding, shown in Fig. 3, is an important part of this assembly. The inspection of this piece, which is held to close limits, is shown in Fig. 4.

The experience in making the windshield base led to the next step in the development of welded assemblies at the Heintz plant. This took the form of windshield stanchions above referred to and gipsy quarters, shown in Fig. 5. The stanchions are made right and left to fit directly to the motor car cowl. Nine pieces made separately are welded together to make up the

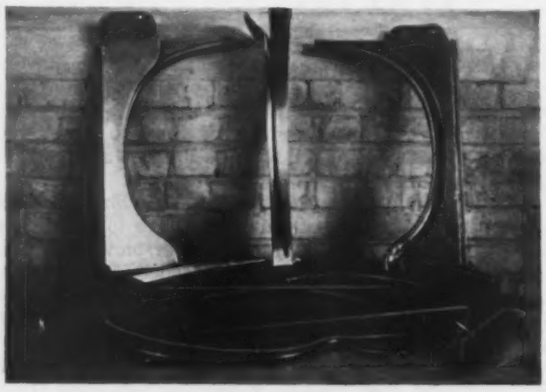


*Fig. 5—Gipsy Quarters Are Welded Assemblies Made Into Box Sections and Include Guides for Rear Side Curtains*

completed stanchion in box form. The work includes spot welding, the welding of seams by electric arc, and also the use of gas welding in several places. This assembly is noteworthy for several reasons: First, through it lengthwise must be left room to pass a tube for an automatic windshield wiper; also a slot must be made, which is to serve as a curtain guide. The slot must test to plus or minus 0.002 in., as it must permit free movement of the curtain when lowered and at the same time must be sufficiently snug to prevent curtain slap in a breeze. Other portions are also closely tested. The angle at the bottom which fits to the cowl must be within plus or minus 0.0005 in. and, when set in a testing fixture, must register the windshield trunnion with a sliding bushing in the fixture when the top end of the piece is against a stop block. Holes drilled for attachment to the cowl are checked to plus or minus 0.001 in.

The gipsy quarter, Fig. 5, the companion piece of the stanchion, is also made right and left and is provided with a similar curtain guide, being used to guide the rear side curtain. This part is built up of 12 pieces joined by seam welds, spot and oxy-acetylene methods. Accuracy limits corresponding to those in the windshield stanchion must be maintained. The box section construction obtained gives great rigidity, it being claimed that these four pieces, the two stanchions and two gipsy quarters, when the steel top of the car is attached, will support the entire weight of the car when inverted.

### Double Jig Used in Assembling Car Top Rails

The steel top which attaches to these supports is made up of two side rails or channels, a rear rail, a

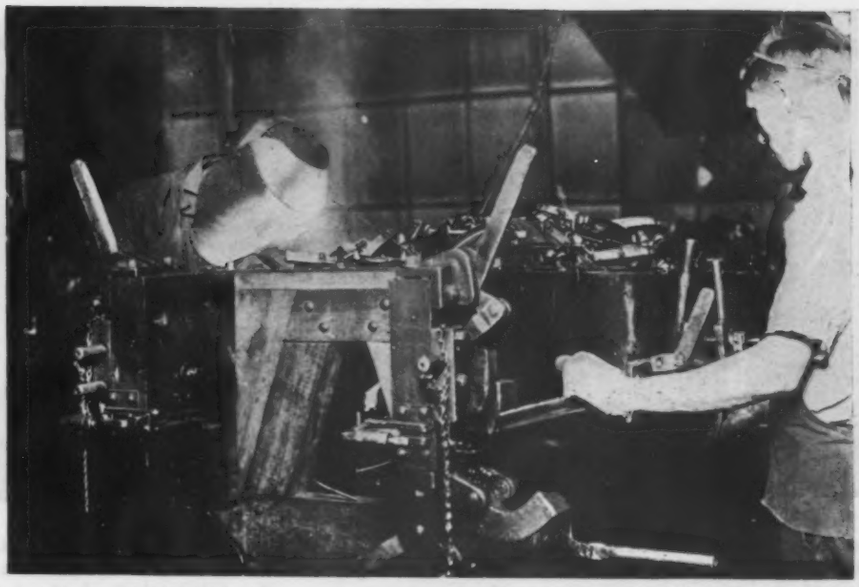


*Fig. 6—Side Rails for Touring Car Permanent Tops Have Curtain Brackets Attached by Arc Welding. A double fixture is used, with two loaders and one welder working as a crew*

number of cross members and two rear corner panels. The side and back rails are checked carefully for contour before welding operations on them are started. Curtain brackets are attached into the side rails. This work is done on a production basis in a double jig, with two loaders and one welder working as a crew as shown in Fig. 6. The jig used makes for low costs, at the same time insuring good pay to the men doing the work. The welding is by the arc process, with the jig itself forming one pole of the circuit. The brackets are first set into fixtures on the jig and the rail is clamped in place against them. To prevent the possibility of error the fixtures are made so that the brackets will fit into them in the correct position only. Each cycle in the double jig completes a pair of rails, and the rate of output is 66 per hour. Contour inspection of the side rails and rear rails is an important phase of the work, the fixture used for inspection of the rear piece being shown in Fig. 7.

Because of the bulky nature of the top when completely assembled, the Heintz company has tooled its customer to effect the final grouping or assembling of the various composite parts into a finished top ready for covering and lining materials. This arrangement has made for a large saving in shipping space and consequently in freight charges. It is such savings in manufacturing and attendant costs which have largely contributed to the constant reduction of the cost of automobiles to the public.

### Press Operation Sometimes Cheaper Than Weld

While progress in welding methods has tended to decrease costs, at times a press operation may prove cheaper than a weld. This is exemplified in the making of rear axle housings at the Heintz plant. It was formerly the practice to weld a reinforcing strip around the differential housing, the strip being intended to provide strength for tapping holes to receive hand hole cover plates. This reinforcement is now secured by a folded flange made in a press before the half housing blank is formed. Three dies compose the folding set, the first taking the flat blank cut to shape and bending the edges for the flange. The next step is a progressive fold and the last a setting down of the flange. This produces a double thickness of the metal to receive the tapped holes. The three dies are used together under one double crank press, shown in Fig. 8, and three men tend the operation. The first, at the right, sets in the blanks and operates the clutch, the other two, one at the back of the machine, move the work along to the second and third dies and out of the machine.

The two halves of the housing, shown in Fig. 9, are seam welded in a special double-head machine designed and patented by the Heintz company. Aside from the actual welding which is done rapidly, the machine permits of a decided saving of time when clamping the two pieces together preparatory to welding. Several sets of clamping jaws and a pair of centering plugs for the ends are all controlled by one air valve lever, which serves to actuate one set of jaws after another as the lever moves through an arc. After seam welding and testing for alinement, spring pads and bearing retainers are welded on in a jig by the arc process.

### Rigid Alinement Test for Axle Housing

The alinement test for the axle housing is rigid. The housing is laid with the ends in vee-blocks, as shown in Fig. 10, the central portion resting on hardened pins. It must lie without rocking. A gage with vee-block ends is then set over it and the upper side tested. In the gage are four sliding flush pins which are provided with "go" and "no-go" limits. The upper

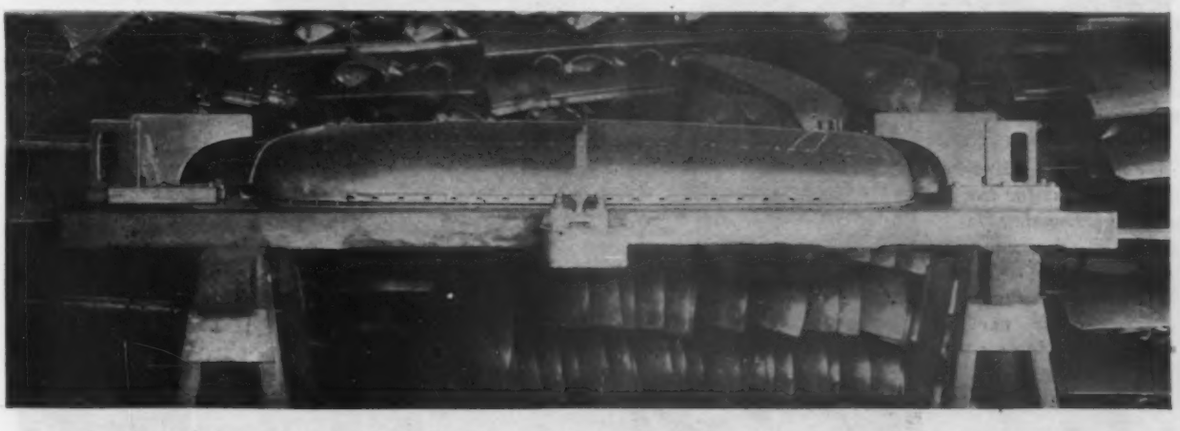


*Fig. 7—Contour Inspection of the Side Rails and Rear Rail Is an Important Phase of the Work Before Final Assembly. The fixture for inspection of the rear piece is shown above*

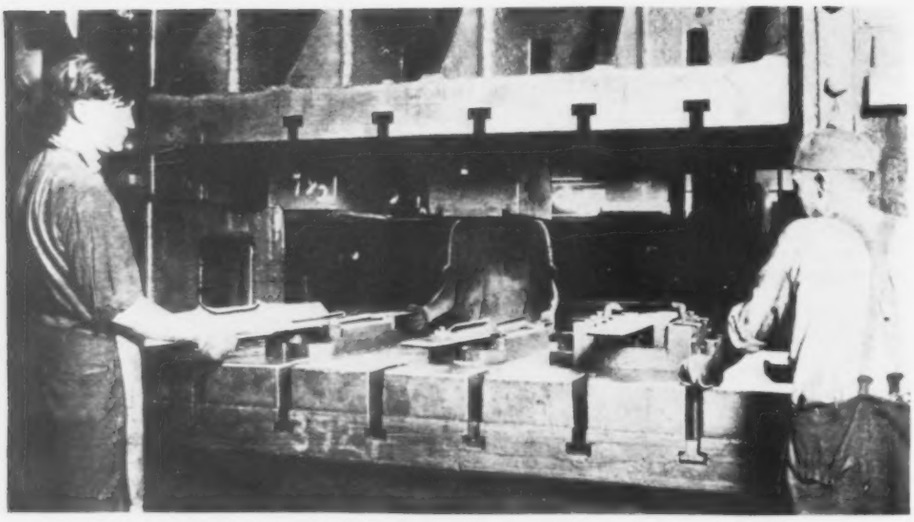


*Fig. 8—A Reinforcing Flange Turned Over In a Press Before the Rear Axle Housing Is Formed Saves an Extra Welding Operation. Three dies, used together under one double crank press, compose the folding operation. The machine is tended by three men*

end of each pin is ground in two steps. If the upper step is flush with or higher than the surrounding portion of the gage the work passes the inspection, provided the lower step is flush with or lower than the gage. Similar flush pins are used for testing side alinement at each end of the housing. A circular center gage, shown in the foreground of Fig. 10, is used for checking the differential openings.

The result of using competently designed jigs is markedly exemplified in the building of taxicab doors, such as shown in Fig. 11, which is of a design and construction patented by the Heintz company. Outstanding features of this design of door are simplicity, freedom from weaving under strain and the elimination of wooden parts, which features tend to lower the cost of installation and minimize squeaking in service. The noteworthy construction features are the complete assembly in only two jigs from basic elements to a finished door ready for paint, glass, hardware and upholstery, without polishing of joints or other work except testing after leaving the second jig.

The stiffening member of the door upon which dependence is laid for freedom from warping is a torque tube across its center, made of ordinary lap weld pipe. To the pipe are welded lugs for attachment, by spot welding, to the side channels. This portion of the door, including the top and bottom members, is completely welded in the first jig, shown in Fig. 12. Incidentally, the fabrication of the top member itself is a noteworthy press operation, consisting as it does, of a box section with a longitudinal arc, forming a curved top for the door. The assembly of the frame, includes also the forming, from the various pressed pieces, of a channel guide in each side frame for a sliding glass panel which is later fitted. After the frame is completely assembled it is transferred from the first jig, Fig. 12, to the second, shown in Fig. 13. In the latter are placed the steel panel and facing pieces for the outside of the door. The frame is laid on these, which have a flange turned up all around, and clamped. The next operation is a turning over by hand of the flange on the panel over a locking flange in the frame. The flange is then set down by a swaging tool in a pneumatic hammer and welded in place making an all steel door constructed to eliminate warping, shrinkage, or the rattling of any loose parts. When taken from the second jig the door is ready for paint without polishing or other preparation, as the joints are of the coach type which leave no rough edges to be finished off.

The test consists of checking holes for attachment of hinges, handle and upholstery and the checking by a roller of the glass guides. These must be sufficiently

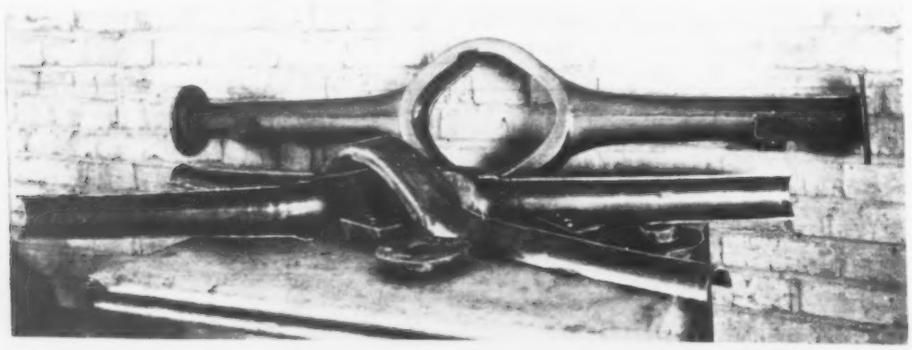


*Fig. 9—The Two Halves of Axle Housings Are Seam Welded In a Special Machine Which Does Two Seams at One Set-Up*

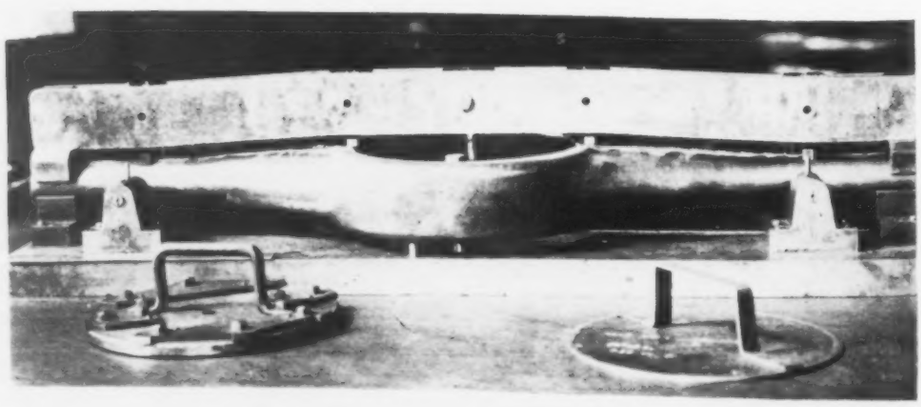


*Fig. 10—Alinement Test for the Axle Housing Is Rigid. A circular center gage, shown in the foreground, is used for checking the differential openings*

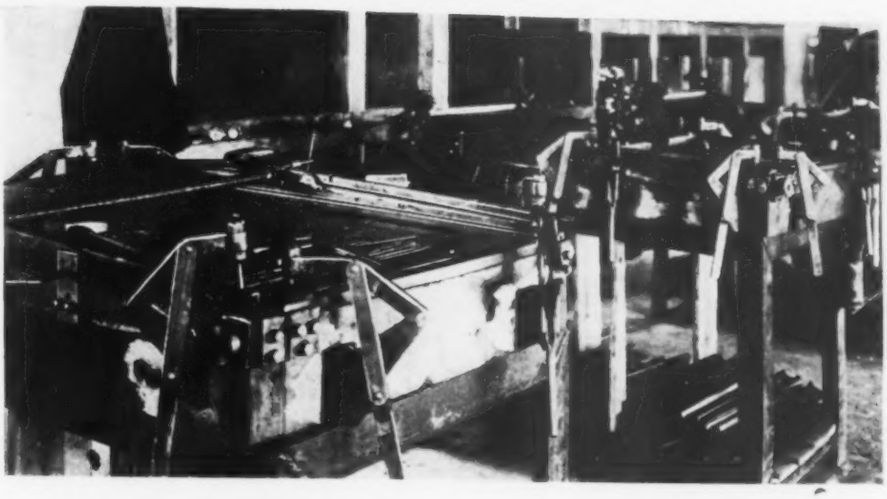


*Fig. 12 — To the Torque Tube of the Taxicab Door Are Welded Lugs for Attachment to the Side Channels. This part of the door, including top and bottom members, is welded in the jig shown*

free to permit easy roll but not loose enough for play that would permit the glass to rattle.

**Final Assembly of Bulky Articles at Destination**

In cases where final assembly of bulky articles is desirable after material leaves the plant one point in particular is essential. Shipment in knocked-down condition saves space, but assembly must be made in a minimum of time after reaching destination. In the case of road beacons and highway light houses, the beacons are carried on motor trucks to the location at which they are to be set up and then completely assembled by only eight bolts. To accomplish this simple assembly problem the beacon is made with base and top constructed of formed segments welded together. The stanchions are of Armco ingot iron and formed to hold the panels steady when set in place. In gathering the pieces for the base or top, a jig is used in which the segments are placed and clamped by clamps along the sides and one large center clamp to hold all pieces. After the four corner pieces are welded, a simple polishing operation is all that is needed to finish the assembly.

Another piece assembled away from the factory is the soda water dispensing slot machine cabinet. This is constructed in a manner similar to that employed for the road beacons, except that provision must be made for the opening and closing of the door. The latter employs two of the torque tubes described as part of the taxicab door, to prevent sag of the door.

*Fig. 11—Taxicab Doors Combine, In the Making, Several Different Kinds of Welding. The fixtures used permit quick assembly and assure good coach joints on the outside which require no grinding nor polishing before painting*

## Rogers-Brown Iron Co. Readjustment Completed

BUFFALO, Jan. 13.—It has been announced by officials of the Rogers-Brown Iron Co. that the readjustment of the company's affairs has now been completed according to schedule, with the plan effective Jan. 1.

The Susquehanna mine of the Rogers-Brown Iron Co. at Hibbing, Minn., has been taken over by the Susquehanna Ore Co., a corporation organized under the laws of Minnesota and controlled by Republic Iron & Steel Co., Inland Steel Co. and the M. A. Hanna Co. The Susquehanna Ore Co. has assumed two of the Rogers-Brown Iron Co. bond issues known as the Buffalo Susquehanna Iron Co. first mortgage 5's and the Rogers-Brown Iron Co. first and refunding 5's. The Hanna company will operate the Susquehanna mine for the Susquehanna Ore Co.

The holders of the Rogers-Brown Iron Co. 7's have consented to the release of the Susquehanna mine, subject to the payment of the two underlying bond issues by the Susquehanna Ore Co. as above referred to. The 7 per cent bonds deposited by the holders as evidence of their consent to this plan will be returned promptly. Steps are being taken to have the necessary indorsements placed upon the bonds.

The M. A. Hanna Co. also will operate and manage the Iron River properties of the Munro Iron Mining Co., a subsidiary of the Rogers-Brown Iron Co.

The Rogers-Brown Iron Co. has issued $2,000,000 of five-year gold notes. The purpose of this issue was to fund a part of the bank debt, the balance of which was paid in cash and to supply additional working capital to the corporation. The pig iron of the Rogers-Brown Iron Co. will continue to be sold by Rogers-Brown & Crocker Bros., Inc.

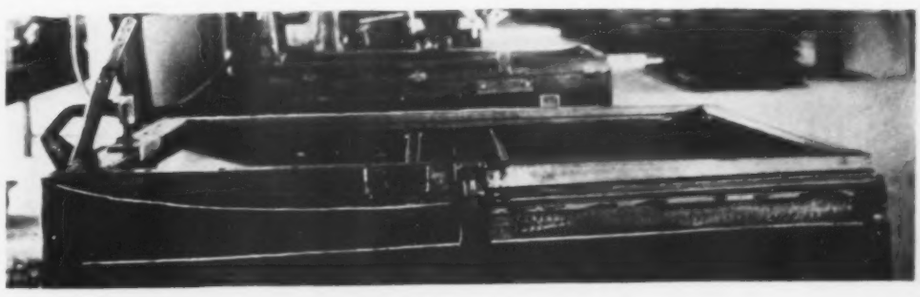


*Fig. 13 — After the Frame Is Assembled It Is Transferred to a Second Jig, in Which Are Placed the Steel Panel and Facing Pieces for the Outside of the Door*

# Pouring Ingots by a New Method

## Reservoir and Multiple-Pouring Float Designed to Reduce Pipe and Blowholes in Steel—May Be Used with Standard Open-Top or Notch Molds

EFFORTS to secure solid, compact ingots, particularly for alloy and high carbon steels, have been impeded by the development of pipe and blow holes formed at the time of pouring and solidification. Uneven cooling results from a more rapid decline in temperature by the outside of the ingot, which is in direct contact with the mold, than the center of the metal. This, it is believed, causes the formation of a cavity at the top of the ingot. Moreover, in the standard practice of pouring steel into the mold a heavy head pressure penetrates deeply into the metal previously poured, forcing into the body of the ingot slag, impurities and gases, which are trapped and do not reach the top of the metal before solidification. This causes a honeycombed structure which may reach the surface of the ingot, creating seams or fine cracks which must be chipped and frequently ground. On the other hand, gas pockets on the interior of the ingot which do not appear on the surface, sometimes result in failures when the material is put into use.

*The Reservoir and Float Are Made of Fire Brick Material. The float is supported on top of the reservoir, usually projecting about 2 in. into it*

Bad ingot surface is also due, at times, to the fact that the forceful stream from the ladle hitting the stool splashes against the mold, solidifying and oxidizing before the metal rising in the mold reaches it. Leaky and running stoppers accentuate this condition. Cracked ingots are generally attributed to top hangers, but it is probable that they are also frequently caused by the sticking of the metal to the stools. Stool stickers, it is conceded, are a consequence of the forceful stream from the ladle cutting into the stools and likewise into the bottom of the molds.

For the purpose of overcoming the difficulties encountered in casting ingots a reservoir and float multiple-pour method of pouring steel was conceived. The reservoir and float are made of fire brick material and are manufactured by the Portsmouth Refractories Co., Portsmouth, Ohio. The reservoir may be used with standard open-top molds or with notch molds. The reservoir rests in the notch or on top of the mold, depending on the type used, and can be set as far down in the mold as may be required.

The float is supported on top of the reservoir, generally projecting about 2 in. into the reservoir. The floats are of various types, but at the bottom of each are four or more holes, which are located as far from the center as possible. The size of the holes depends largely on the grade of steel being poured, the size of opening of the ladle nozzle, the tonnage of the heat, and the static head pressure of the ladle. The holes in the basket most generally used, however, average 2 in. in diameter.

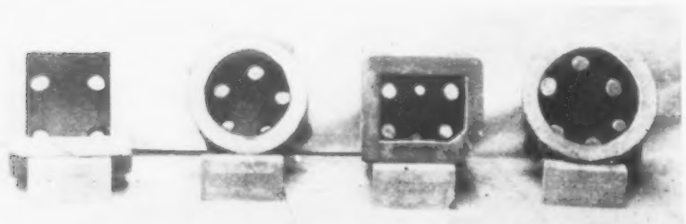
In pouring, the reservoir is placed on top of the mold while the basket in turn rests on top of the reservoir. The ladle nozzle is placed directly over the float. Hence the metal from the ladle creates in the float a pocket of steel, which in turn drains through the holes in the float to the mold proper. Since the metal flows into the mold in several streams, neither the stool nor the bottom of the mold are hit by the strong, forceful stream from the ladle. Moreover, the streams do not penetrate the metal already poured into the mold and, consequently, the slag and other impurities which otherwise would be buried or imbedded deeply in the ingot, are permitted to rise to the top.

In breaking the descent of the metal the float frees a considerable percentage of the gases, it is said. Likewise, the division of the steel into several streams also frees gases which, under regular practice, would be forced into the ingot, creating secondary pipe or gas pockets.

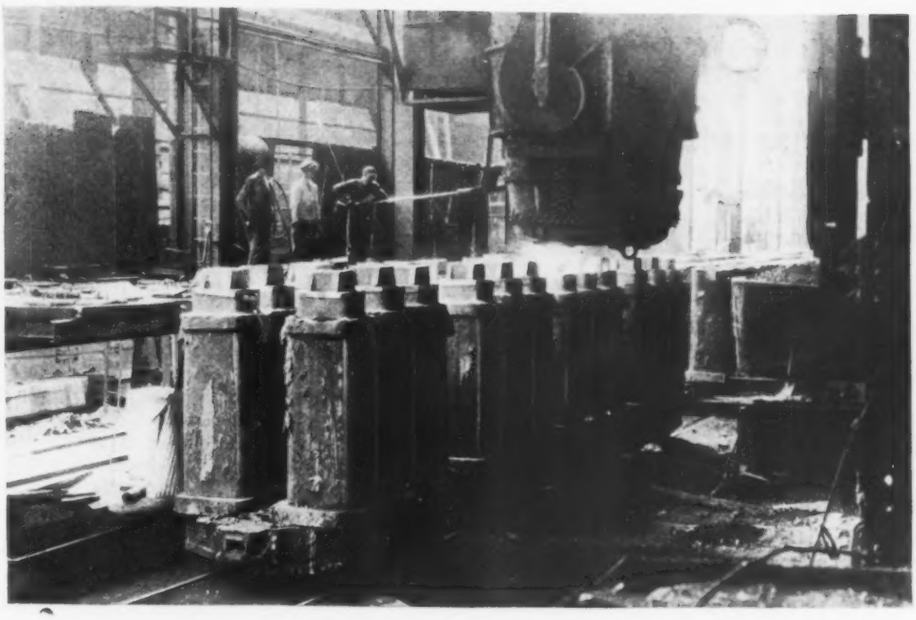
*The Reservoir Can Be Used With Standard Open-Top Molds or With Notch Molds, as Shown in the Illustration*

The holes in the float are located so that the metal pours into the corners of the mold. This, it is said, allows the center of the ingot, which is the hottest part of the metal, to discharge gases more freely, making for a more solid and compact ingot and greater freedom from cracks and seams.

While the steel is being poured, the walls of the float and reservoir are being heated to a high degree



*Various Types of Floats Are Used and at the Bottom of Each Are Four or More Holes as Far From Center as Possible*



*A Heat Being Poured, Using the Reservoir and Float Multiple-Pour Method*

through radiation. Hence the metal last poured into the ingot loses little of its original heat through contact with the walls of the float and reservoir. The mold and reservoir are filled with steel until the float, which is lighter than the metal, floats on top of the ingot, thereby retaining an intense heat in the metal in the reservoir or upper portion of the ingot, for a considerably longer period, it is said, than has so far been obtained in standard practice, without using expensive fuels or gases.

The delay of the descent of the metal in the reservoir has the effect, it is said, of filling up more of the pipe and consequently yielding more sound steel.

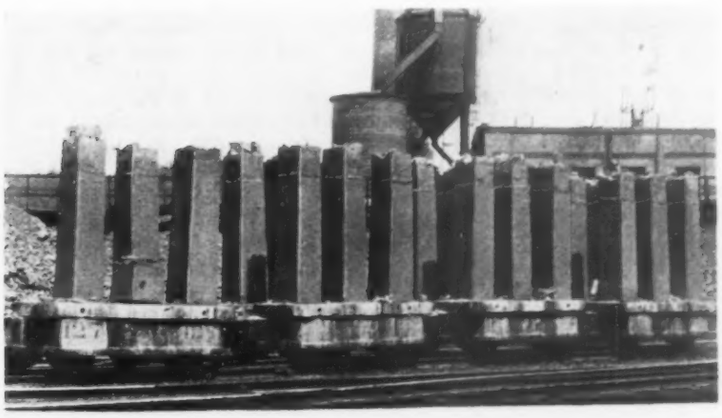
The multiple-pour method also proves advantageous, it is stated, when running or leaky stoppers are encountered, because it is not necessary in such instances to knock the reservoir off the mold. Instead, the holes of the float, which are designed to take the full stream from the ladle, permit the steel pourer to pour until the float floats, before passing on to the next mold, thereby insuring as full a yield, it is asserted, as if a running stopper had not been encountered, the yield being from 82 to 85 per cent free from pipe. In contrast, the refractory top, under regular practice, must be removed, in which event the ingot yield free from pipe is considerably reduced.

There are several indirect savings from the use of the reservoir and float which may not be apparent at first glance. For instance, considerably longer life is obtained, it is asserted, from stools, buggies and ingot molds, because the float absorbs the forceful pressure of the stream, eliminating the cutting and wearing effect of the direct stream from the ladle. For the same reason stool stickers are materially reduced and broken buggy axles rarely occur, it is stated.

In the reservoir and float practice the refractory top does not adhere to the ingot after stripping. Very little refractory material, therefore, reaches the soaking pits, it is said, and practically none is encountered beneath the roll trains, which insures cleaner scale for blast furnace use.

Manufacturers of high silicon heats for use in making electrical sheets find it advantageous to use the reservoir and float method, it is asserted, because it produces much better finished material and great yield. On the other hand, for certain grades of steel it has been found profitable to use only the floating reservoir.

*In the Case of These Molds a Running Stopper Heat Was Poured Without Disturbing Reservoir or Float*



*Ingots Poured by the Reservoir and Float Method, Viewed After Stripping*

# Reduced Ore Piles Raise Hopes

## Better Prices Expected Because of Small Stocks at Lake Region Mines—Expansion of Mechanical Methods and Development of Sintering—Trend Toward Larger Operating Units

BY DWIGHT E. WOODBRIDGE

WITH a drop in iron ore prices below the lean figures of the preceding season, the year 1925 naturally was a poor one for the mines. Indeed, nothing complimentary is said about it by anyone in the Lake region; even the vessel men, though they have had plenty to do at good figures, encountered little bad weather and enjoyed an unusually long season, are complaining because of the low water that reduced their cargo capacity. The scheduled drop of 50c. a ton from the year before did not, as a matter of fact, represent the full loss to producers on all shipments, for sales were made in the latter part of the season at as much as 50c. lower, bringing Mesabi non-Bessemer down to $3.75. Total shipments of the year, Lake and all-rail, were about 55,210,000 tons, estimating all-rail at 1,130,000 tons. The proportions of the total tonnage sent down by the various districts were as follows:

| | Per Cent |
|---|---|
| Mesabi | 66.07 |
| Gogebic | 12.33 |
| Menominee | 10.44 |
| Marquette | 6.44 |
| Cuyuna | 2.59 |
| Vermillion | 2.13 |

The older ranges showed a slight increase in percentage over the previous season.

### Drift Toward Mechanical Operation of Mines

In the mines the drift toward mechanical operation and larger units continues. It has been the feature of the Lake region for some years, because of increasing overhead costs, the higher wages paid, and the smaller margin possible for profit. The trend is also toward preparing ores at mines. Perhaps the most important new construction of the year has been in crushing and sorting works, with several built on the Mesabi and one at the Maas mine, Marquette Range. On account of the fact that some of the larger companies have found it impossible to keep up with their minimums, and because leases on large mines now held under low royalties are approaching their termination, a number of leases that seemed to be less valuable have been abrogated. Most of these are on the western Mesabi Range.

Some rather remarkable records have been made. At one Cuyuna Range mine one 130-ton steam shovel in the month of November moved 197,000 cu. yd. of overburden at a total cost, exclusive of plant amortization, of 11c. per cu. yd. In all 1,250,000 cu. yd. are being moved at this property. At another Cuyuna Range operation a drag line electric machine has moved earth all season at a cost of about 12c. A number of large stripping jobs are in progress, particularly on the Mesabi, and by the Oliver company and Pickands, Mather & Co. The Fraser mine is being stripped of 9,000,000 cu. yd. and will be a shipper in 1926; about the same amount is being taken off the Minnewas, a State lease at Virginia, Minn.; the Elba location will be entirely open pit hereafter. A 350-ton electrically operated shovel, said to be the largest in the world, is stripping overburden at the Bennett mine, near Keewatin, Mesabi Range. About 2,500,000 cu. yd. is being removed and the job is nearly done. The Great Northern Railway has been hauling heavier and heavier loads of ore, and is now moving 165, or more, 75-ton cars in a train, loaded, and up to 140, or more, empty cars back. With these loads their new engines are making the round trip, ore yards to docks, in 6½ hr. Important ore pier replacements are under way or have just been completed, at Superior, Wis., for the Great Northern and Northern Pacific railroads, and at Ashland, Wis., for the North Western line. These new structures are all concrete and steel, and are up to the minute in capacity and ore handling devices.

There is an extension of the policy of group operation. It was inaugurated on a considerable scale only two or three years ago when Pickands, Mather & Co. was made operating agent for a number of properties in addition to those in which it had a material direct interest. Both this company and M. A. Hanna & Co. are now operating a number of mines in which their own interest as owners is quite small, if it exists at all. The policy is easier for the small operator and relieves him of numerous responsibilities. But it tends toward a still closer control in the industry.

The nearly 18,000,000 tons of ore handled over the shipping piers of the Duluth, Missabe & Northern Railway was taken in 2108 loads, or an average cargo of 8397 tons. This is not so heavy an average as during the past few seasons, which is accounted for by the fact that water in the connecting channels of the Great Lakes has been lower than usual, affecting cargoes to the extent of several hundred tons.

### No Heavy Stock Piles to Depress Prices

Better ore prices are expected for this year. It has generally been understood that the immediate cause for the recent drastic cuts in price has been the pressure of heavy stock piles at various points. These were stocks that represented high initial costs and that grew in expense at the rate of not far from 40c. a ton a year, because of interest and taxes. These stocks have now been well reduced and no longer are burdensome; there is now no incentive to cut the price of ore in order to move them. Moreover, everyone looks for heavy production in 1926, possibly well toward 60,000,000 tons, not an unusually large amount when compared with the average for the past ten years, which is 52,956,000 tons. Operators need a considerable advance in order to bring them out even. For example, in the case of one company working many mines, only two were on the right side of the ledger last year. One of the two is a very large property with a good ore, exceptionally low royalty and light stripping, which long ago was amortized. The other is an unusually small mine. Another example is a mine the 1925 shipments of which approximated 200,000 tons. However, its overhead—interest on bonds, taxes, royalty, etc.—amounted to about 50c. a ton more than the ore was worth at the mine mouth. For such mines, and many others, any probable advance in price will not be enough, but it will help and it will give hope.

There were no burdensome stocks of ore left at mines on the close of navigation. Possibly the largest tonnages on hand are at mines of the Cleveland-Cliffs Iron Co. in Marquette County, Mich., but these do not amount to more than about 1,500,000 tons, which is not much considering that company's definite outlets for the coming season. There are no large stocks on the Gogebic Range, and Iron Mountain was well cleaned up at the close of navigation. There is some ore on the surface around Crystal Falls, Mich. Vermillion Range stocks are small, and considering its output the Mesabi had practically nothing on hand. This augurs well for the coming year and for the extent of winter operations throughout the entire Lake region.

Unless leases are renewed, the connection of the Oliver Iron Mining Co. with the Canisteo Mining Co.

ceased at the close of the year. During its operation of these properties, which include the Canisteo, Holman and South Judd mines, the Oliver company has shipped about 31,000,000 tons of ore, chiefly concentrates. A large tonnage remains in the properties, but considerable stripping must be carried out before much of it it will be available. There are rumors of negotiations for lease with several other companies, and the Jones & Laughlin Steel Corporation and the Ford Motor Co. are mentioned, but the Oliver company would appear to be the logical interest to remain in control. The Trout Lake, Minn., concentrator, in which these ores are washed, has shipped in the year nearly 2,900,000 tons, and was in operation until Nov. 14.

Whatever may be the result of negotiations for these Canisteo leases, if negotiations actually are in progress, it would appear that the operations of the Oliver Iron Mining Co. will hereafter be concentrated more closely in the neighborhood of Hibbing and Virginia, Minn. Some of the western Mesabi wash ores have not worked out satisfactorily of late, running up in silica to an extent that makes them undesirable and that has compelled the shipment of a grade assaying up to 18 per cent silica. The company's system of mine and dock grading and mixing has overcome the difficulty brought about by this, but the volume of low silica ores that can be used for this purpose is not unlimited. Besides, the Oliver company has a number of important leases near Hibbing and Virginia that require attention. It is preparing its Frazer mine for heavy production, its Hull-Rust mine contains an enormous ore body, its Hibbing townsite mine is partly stripped and contains a large tonnage of low cost ore, its Minnewas mine is being stripped and its Missabe Mountain undoubtedly will produce heavily for many years. And these are not all the newer properties of the central Mesabi on which it is likely to push its activities.

The premier mine of the region, and of the world, is Hull-Rust, at Hibbing. Its shipments in 1923 were nearly 9,000,000 tons, and since it was opened in 1896 it has produced an average of 3,000,000 tons a season, or in all 85,656,000 tons—some 8000 miles of loaded cars. Probably it has at least an equal quantity yet in reserve, much of which is exceptionally good ore.

### Trend Toward Direct Control of Ore

The trend toward the direct control of ores by steel makers continues, thus limiting still more what is known as the independent market. Some of the so-called independent operators sell all their product to single consumers and so do not get into the general market. The latest development in this direction was the purchase of the Susquehanna mine, near Hibbing, by the Republic Iron & Steel Co., the Inland Steel Co. and M. A. Hanna & Co. Neither Inland nor Republic was especially strong in reserves in Minnesota, but the Susquehanna mine contains about 16,000,000 tons of a medium grade non-Bessemer ore assaying about 50 per cent iron. Men in the trade say there is an "oversupply of ore," but this is hardly the proper statement; there rather is an excess of mininum agreements for mining ore. Until this situation changes the independent operator needs some special factor of advantage to help him out, such as a desirable grade of ore. To be sure, this condition will change in due time, and the surplus of royalty payments will be absorbed, but opinion varies as to when that time will arrive. Some say two years, some say five. Be that as it may, the fact remains that the absorption of ore bodies in the hands of consumers has not added a pound to the reserves of the region, which now are steadily declining.

Some publicity has been given to a recent statement that there are available ores in the Lake Superior region "to last 100 years." The facts do not warrant such a prediction, unless one takes into account vast bodies of lean ores, both hematite and magnetite, that must undergo concentration processes to become available, and these processes are not practicable at present prices except by the aid of cheaper freights, lower taxes or bounties. No one of these aids is a probability in Minnesota.

The peak of the curve of Minnesota's iron ore production will come relatively soon, but the date of final exhaustion is a long way off. The diminishing curve will flatten very gradually to its end, but the importance of the Lake Superior iron region will have gone whenever the furnaces now depending on it are forced to go elsewhere for any considerable portion of their ore. The present attitude of mine owners and of the commonwealth is not one to give hope of the permanence of mining activity as the result of the conservation of mineral resources. As has already been noted, low grade leases are being abandoned and efforts are being concentrated on the removal of the more desirable ores. For this, however, little blame can be charged to the miners; economic factors, the result of the mineral policy of the State, are responsible.

### Less Dependence on Lake Ores

The nation as a whole is beginning to depend less on Lake Superior for its ore supplies. The turn of the tide is apparent. The north Atlantic Coast has developed the ores of Cuba and South America and is importing from Europe to a larger extent than formerly. New England is building an iron industry on imported ores. The Pacific Coast is now receiving iron from Utah and will enlarge this supply as demand permits. The South pushes into the border line toward the North. There is some talk of an iron development in the intermountain region and on the north Pacific Coast, and this may come if economic difficulties can be overcome. The region of the Great Lakes and the Mississippi Valley will become the more definite field into which iron from Lake ores ultimately will move. This does not mean a reduced demand for Lake ores, for these regions are vast and rich and growing. But perhaps it does mean that relatively to the nation's requirements as a whole the call on Lake ores will accelerate less rapidly than it has over the years that are gone. It indicates, too, that in order to hold its preeminence, the Lake ore fields will have to use more

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*DWIGHT EDWARDS WOODBRIDGE, consulting mining engineer, Duluth, Minn., was educated at Carleton College, Northfield, Minn., and in 1895 began as mining engineer in Duluth. Later he became consulting engineer of the United States Bureau of Mines in charge of iron mining investigations, his contributions including technical papers Nos. 30 and 33 of the bureau, under the titles, "Sanitation at Mining Villages in the Birmingham, Ala., District," and "Mine Accident Prevention at Lake Superior Iron Mines." He has contributed also to the proceedings of the American Institute of Mining and Metallurgical Engineers, the Lake Superior Mining Institute and other organizations. Mr. Woodbridge has had much to do with iron mining developments on the Mesabi Range in recent years, more especially in connection with the operations of the Mesabi Iron Co. and other companies in concentration and sintering.*

care in so pre-treating their shipments that they can reach as wide an area as practicable, that they will have to improve the quality of ores shipped by beneficiation, so as to reduce freight charges per unit of iron and to aid the furnace operator toward economies. Fortunately, there are opportunities in the Lake district for just such improvements, if they are not hampered by a short-sighted and unfriendly attitude on the part of the public and by adverse legislation.

### Sintering of Fine Ores Successful

It looks as though one of the important coming developments in the iron ore business will be more careful preparation of ores going into the furnace. Indeed this has been stressed for some time as the great need of the day, to enable furnace men struggling with more and more difficult raw materials to maintain the best results of the past in the face of their newer and greater handicaps. The sintering of finely comminuted ores has been done in the past only on materials which could not be successfully used unless agglomerated, such as flue dust and finely ground magnetites. Recently a beginning has been made with dusty and wet natural ores.

But two developments have come about during 1925 the probable importance of which is hard to foretell and difficult to appreciate. One of these is that the sintering of fine ores is not a mystical art, capable of accomplishment by none but a few fortunate initiates, but a comparatively simple mcehanical process requiring no rare and elusive temperamental ability on the part of the metallurgist. Given a machine properly built, and ores susceptible to agglomeration, many engineers seem now to be able to produce uniform and satisfactory sinter in large quantities. For this no little credit is due the Mesabi Iron Co. and the American Ore Reclamation Co. working together to devise a machine that would stand up under the heavy duty demanded and work all the time and not semi-occasionally. The studies made by the engineers for the Anshan Steel Works, who now have a four-machine plant ready for erection in Manchuria, and those at Chateaugay and Port Henry, N. Y., and others also have let in so much light on the question of sintering that it is not now regarded as it was.

### Use of Sinter Increases Furnace Output

The second development is along the same line; it is the action of sinter in the furnace. For years it has been predicted that by the use of sinter in the blast furnace in the place of natural ores, capacity might be increased fully 20 per cent and the coke consumed per ton of iron reduced at least 10 per cent. These were the ideas of the late James Gayley and were based on his calculations and work that he did. Performance results from charges of 100 per cent sinter finally are available from furnaces. Briefly, they show the furnaces to have increased output by 60 per cent, or more, with coke consumption reduced 25 per cent or more. These are comparisons with best previous records at the same plants. The furnaces seem to run without complications and with a minimum of off iron. Although some such result was to have been expected, the added capacity and reduced coke requirements have far exceeded anticipations.

*Shenango Mine, Mesabi Range, Operated by Shenango Furnace Co. It has been worked by the open-pit and underground methods. Surface stripped,* 138 *ft. Total stripping removed,* 6,000,000 *cu. yd. Lowest track in mine,* 320 *ft. Original ore depth,* 270 *ft. Thus far about* 11,000,000 *tons mined; ore remaining, about* 1,250,000 *tons*

### More Pre-Treating of Ores Predicted

If these figures signify anything at all, they mean this: That not only ores which must be sintered to become available will be so treated, but that ores which

can be sintered also in time will be handled in this way. It is not improbable, if these early results can be confirmed in wider practice, that iron makers who wish to keep ahead of the procession will find it advisable thus to pre-treat their ores when they can do so. Fine, dusty ores of the Mesabi, for instance, before long will be subjected to this manipulation, either at the mines or at the furnaces. The only concentration many of them will undergo will be the elimination of moisture. Ores will be screened as they are mined, the coarser sizes shipped direct and the fines to sintering machines. Under usual economic conditions these operations should take place at the mines; whether they do or not will depend on various factors. If they do, then we may expect to see in time the Lake Superior region dotted with sintering plants as it now is with beneficiating works of more simple types, such as works for crushing and screening, drying, washing, jigging, and for magnetic separation. In fact, a beginning has been made in this direction by the erection of the Evergreen plant on the Cuyuna range, which was designed to sinter wet and fine ores from the Evergreen and other mines near Crosby, Minn.

It is a peculiar thing in connection with this matter of sinter in the furnace that the use of a small proportion of sinter in the burden does not seem to have given results at all commensurate with those secured from the use of 100 per cent of sinter, or even of 50 to 56 per cent. It is quite evident that all is not yet learned as to the use of this material in the blast furnace.

There are now some 45 plants in the various ranges of Lake Superior for beneficiation, and about 25 per cent of all ores shipped pass through them. They include all sorts of devices adapted to Lake ores, from washing to magnetic separation and sintering.

### Shipments of Important Mines in 1925

Mines which shipped 1,000,000 tons or more for the past year numbered 11, and are as follows:

| Mine | Operator | Tons |
|---|---|---|
| Hull-Rust | Oliver Iron Mining Co. | 5,142,000 |
| Missabe Mountain | Oliver Iron Mining Co. | 3,605,000 |
| Mahoning | Pickands, Mather & Co. | 1,818,000 |
| Canisteo | Oliver Iron Mining Co. | 1,712,000 |
| Morris | Oliver Iron Mining Co. | 1,631,000 |
| Norrie-Aurora | Oliver Iron Mining Co. | 1,587,000 |
| Spruce | Oliver Iron Mining Co. | 1,382,000 |
| Sellers | Oliver Iron Mining Co. | 1,380,000 |
| Newport group | Pickands, Mather & Co. | 1,367,000 |
| Hill Annex | Jones & Laughlin Steel Corp. | 1,210,000 |
| Leonidas | Oliver Iron Mining Co. | 1,057,000 |

# MORE IRON ORE PRODUCED

## Output in 1925 14 Per cent Over 1924—Imports Lower and Exports Higher

Iron ore mined in the United States in 1925, exclusive of ore that contained more than 5 per cent of manganese, is estimated by Hubert W. Davis, Bureau of Mines, at 62,079,000 gross tons, an increase of 14 per cent as compared with that mined in 1924. The ore shipped from the mines in 1925 is estimated at 63,819,000 tons, an increase of 25 per cent as compared with 1924. The stocks of iron ore at the mines, mainly in Michigan and Minnesota, apparently decreased from 12,410,619 tons in 1924 to 10,774,000 tons in 1925, or 13 per cent. The considerable increase in output may be ascribed in part to a better demand for steel and to general speeding up in pig iron manufacture during 1925. These estimates are based on preliminary figures furnished by producers of about 99 per cent of the normal output of iron ore.

About 85 per cent of the iron ore shipped in 1925 came from the Lake Superior district, in which approximately 52,316,000 tons was mined and 54,124,000 tons was shipped, increases of 16 and 26 per cent respectively, as compared with the quantities mined and shipped in 1924. These totals include the ore from the Mayville and Baraboo mines in Wisconsin and ore shipped by rail as well as by water from all mines, but exclude manganiferous ores that contained more than 5 per cent of manganese. The ore is chiefly hematite. The stocks of iron ore in this district apparently decreased from 11,095,787 tons in 1924 to 9,398,000 tons in 1925, or 15 per cent. The stocks at the end of 1925 were about 1,069,000 tons less than the average for the preceding five years.

The mines in Minnesota furnished 70 per cent of the total iron ore shipped from the Lake Superior district in 1925 and 59 per cent of the total of the United States. The mines in Michigan furnished 28 per cent of the grand total.

The Southeastern States mined approximately 7,510,000 tons of iron ore in 1925, an increase of 1 per cent as compared with 1924. The shipments of iron ore from these States to blast furnaces in 1925 amounted to 7,262,000 tons, an increase of 3 per cent over 1924. The Northeastern States, which include the Adirondack district in New York, and the Cornwall district in Pennsylvania, in 1925 mined 1,302,000 tons of iron ore and shipped 1,482,000 tons, an increase of 15 per cent compared with 1924. The Western States mined and shipped in 1925 approximately 951,000 tons, an increase of 31 per cent compared with 1924. The increase in this group of States in 1925 reflects the more active operations at mines in the Iron Springs district, Utah, and in the Hartville district, Wyoming.

### Imports and Exports

The imports of iron ore, reported for the 11 months ended Nov. 30, 1925, amounted to 1,950,648 tons. The imports for 1924 were 2,047,055 tons. The reported exports for the 11 months amounted to 629,572 tons, as compared with exports for the entire year of 1924 of 595,413 tons.

Detailed figures of production by States are shown in the table:

| District | Ore Mined (Gross Tons) 1924 | 1925 |
|---|---|---|
| Lake Superior: | | |
| Michigan | 12,350,755 | 14,500,000 |
| Minnesota | 31,902,085 | 37,000,000 |
| Wisconsin | 690,058 | 816,000 |
| | 44,942,898 | 52,316,000 |
| Southeastern States: | | |
| Alabama | 6,993,613 | 7,125,000 |
| Georgia | 113,039 | 111,000 |
| Missouri | 79,847 | 40,000 |
| North Carolina | 12,525 | 24,000 |
| Tennessee | 179,853 | 133,000 |
| Virginia | 89,792 | 77,000 |
| | 7,468,669 | 7,510,000 |
| Northeastern States: | | |
| New Jersey | 65,197 | 202,000 |
| New York | 255,832 | 134,000 |
| Ohio | 244 | 2,000 |
| Pennsylvania | 807,208 | 964,000 |
| | 1,128,481 | 1,302,000 |
| Western States | 727,371 | 951,000 |
| Grand total | 54,267,419 | 62,079,000 |

## Telephone Company to Spend $28,000,000

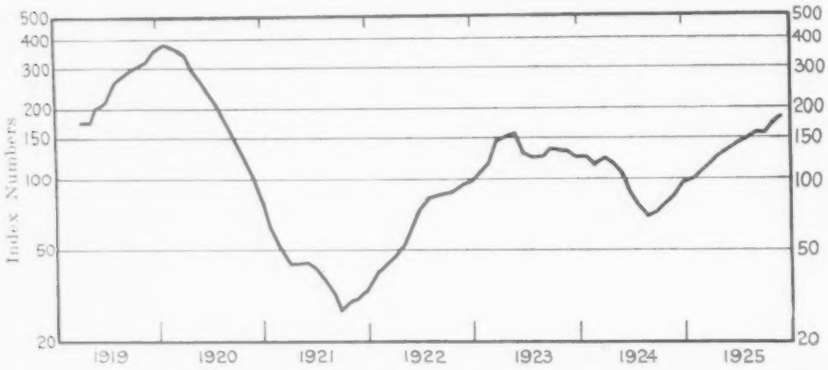
The American Telephone & Telegraph Co., New York, announces that it contemplates plant construction in 1926 to cost approximately $28,000,000. About $19,000,000 was spent for plant construction in 1925. The proposed expenditures this year are divided about as follows: Aerial wire, including pole lines, $5,160,000; long distance cables with associated pole lines, loading coils, buildings and equipment, $11,200,000; switchboards and other telephone and telegraph equipment, $8,130,000; line work not included in the aerial wire and cable projects, $3,860,000. The new facilities will provide for increases in long distance telephone traffic. The 1926 program covers plant additions in nearly every State.

The United States Malleable Iron Co., Toledo, Ohio, has been placed in the hands of receivers by Judge John M. Killits in the Federal Court, as a result of a complaint filed by a creditor. Robert H. Leitch and Robert C. Dunn were named as receivers.

# Barometer of Machine Tool Orders

## Revised Indicator of National Machine Tool Builders' Association Refers to Average Value of Orders in 1922, 1923 and 1924

AS a barometer of machine tool orders, E. F. DuBrul, general manager of the National Machine Tool Builders' Association, Cincinnati, has issued a new index. Machine tool orders compiled from 60 reports are compiled on the dollar basis back to 1919. The base line of the barometer curve represents the monthly average shipments of the years 1922, 1923 and 1924. Then each month's total orders, as a percentage of this base, gives a monthly percentage index.




DOLLAR Values of Gross Orders for Machine Tools by Months Are Here Shown as Percentages of the Value of Monthly Shipments Averaged for the Years 1922, 1923 and 1924. To smooth out the curve a three months' moving average is employed. Thus the figure for November, 1925, while in dollars it was 88.9 per cent above the three-year average, has been merged with the figures for September and October, the average index of the three being 182. Similarly, the October plotting is 172.8, being the average of August, September and October. October itself gave an index of 207.8, or 107.8 per cent more than the three-year average forming the base.

To smooth out the curve and get the trend these figures were reduced to a three months' moving average so that the curve begins with the average of the first three months of 1919, plotted on the March date line for that year, and the last figure plotted represents three months' average for September, October and November of 1925.

What the chart shows Mr. DuBrul discusses briefly as follows: "Since 1919 the big swings have had a rough periodicity of from 30 to 40 months. From the bottom of 1919 in March to the bottom in September, 1921, was 29 months. Then to the bottom in August, 1924, was 35 months. From the peak in January, 1920, to the May, 1923, peak was 40 months. The average of these three intervals, therefore, was approximately 35 months.

"No one can predict just when the present movement will crest but it is not likely to run as long between the 1923 peak and the coming peak as 40 months —the interval between the previous two peaks. Present facts justify the 'guesstimate' that the present peak is likely to crest about 35 months after the previous peak. We need not be surprised if the peak month should be any month between now and April."

The present, he adds, would seem to be a good time to be working on new designs that could all be proved up before the next period of falling demand, when the shop could be put to making jigs for the new types, thereby stabilizing employment of as many key men in the shop as possible. Then the next period of dull business should be devoted to missionary work in the market, explaining the merits of the new designs, planting sales seeds. Some of them may ripen during the dull period, but most of them will ripen on the next rise.

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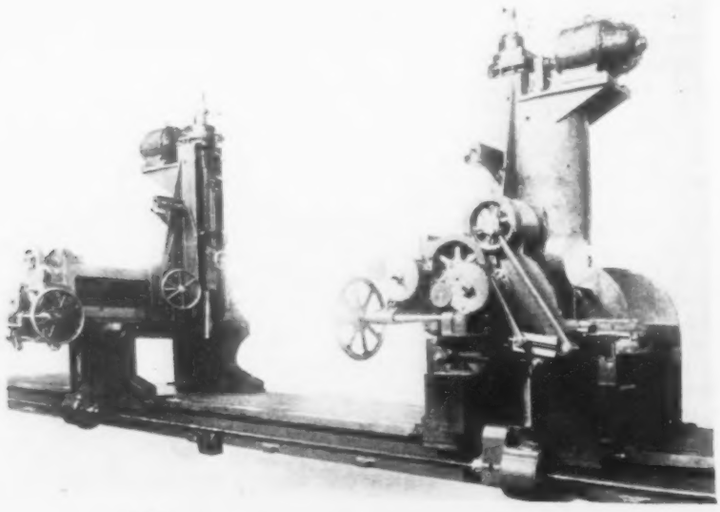
## New Line of Locomotive Frame Slotters

Unusual simplicity of design is claimed for the improved line of locomotive frame slotting machines which is being placed on the market by the Betts Works of the Consolidated Machine Tool Corporation, Rochester, N. Y. A minimum number of working parts are employed, advantage being taken of electrical action for driving, feeding and traversing, instead of using mechanical means for these operations. The machines are available equipped with from one to three heads, as required, the unit illustrated having two heads.

The width between yokes, height under yokes, length of bed and travel of slotting rams are arranged to meet the special requirements of the user. The height and



*Locomotive Frame Slotting Machine of Simplified Design. Advantage has been taken of electrical driving, feeding and traversing in place of mechanical means for those operations. The machine may be equipped with one, two or three heads as required*

length of the stroke is arranged to permit slotting of frame in multiple. The bed consists of a wide, deep casting with long narrow guiding surfaces for yokes. The faces on which the yokes bear, are chilled, and the top is provided with suitable T-slots for clamping work. Both sides of the bed are equipped with accurately cut stationary lead-screws, the yokes being moved by means of revolving nuts which engage with these screws. The lead-screws have tumbler bearings which prevent sagging. Thrust is taken by roller bearings.

Each yoke has a separate electric feed and power rapid traverse along the bed, and is driven by a single motor. The yokes also have fine hand adjustment by means of a large handwheel within reach from the floor. Cross-rails are arranged with either hand or power swiveling movement for angular slotting. Each saddle has electric feed and power rapid traverse, also hand adjustment along the cross-rail. The motor driving the feed and power rapid traverse to yoke, performs the same functions for the saddles. Both yoke and saddle feed may be engaged simultaneously for angular slotting. The feed is adjusted by means of graduated feed plates located conveniently for the operator and accessible from the floor. Independent feed to the yoke and saddle is provided.

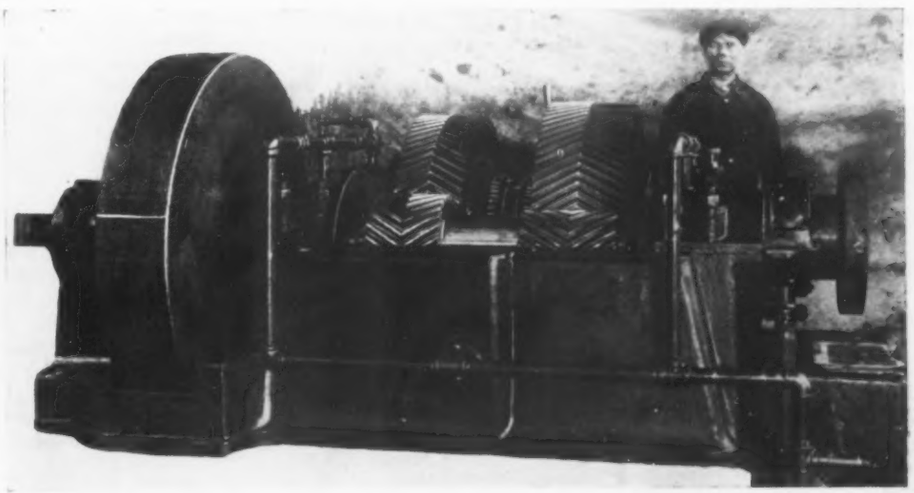
Each ram is driven by a 20 hp. reversing motor having a high return speed ratio. Cutting and return speeds are independently adjustable by means of separate rheostats for each, and a wide range of speeds is provided. Push button control for starting, stopping, reversing, inching, etc., is available for all motors. The rams are counterbalanced by means of sliding weights suspended by steel cables, and are entirely self contained. They are driven through spiral bevel gears and a rotating screw meshing with a bronze nut, with provision for taking up wear. A mechanical knockout device is provided to prevent overtravel. The length of the stroke is adjustable by means of dogs which operate a master switch controlling the driving motor.

Ample lubrication is supplied to all bearings. Important saddle bearings are supplied with oil by adjustable automatic pump, with feeder pipe to each bearing.

## New Two-Speed Rolling Mill Drive

A two-speed gear drive for rolling mills, developed by the Farrel Foundry & Machine Co., Buffalo, and used by the Latrobe Electric Steel Co., Latrobe, Pa., in connection with a 10-in. bar mill is here illustrated. The drive is designed to transmit 500 hp. with motor speed of 860 r.p.m. and to give a high speed of 275 r.p.m. to the mill and a low speed of 165 r.p.m.

The desirability of a variable-speed drive for a bar mill is well understood and it is relatively common to employ for this purpose a variable-speed motor.



*Two-Speed Gear Drive Used in Connection With Bar Mill, Permitting the Use of a Standard Motor Which Can Be Run at Relatively High Speed. The provision for lubrication is an outstanding feature*

The new gear drive allows the use of a standard motor which can run at a relatively high speed. The flywheel on the pinion or motor shaft can be designed for the high speed of the motor instead of for the low speed, as is necessary when a variable speed motor is used, this being stressed as saving expense and resulting in better operating conditions, because the flywheel is always working at maximum speed and, therefore, it is always capable of storing or giving out the maximum amount of energy in proportion to its weight.

The drive is a self-contained unit. The two pinions are integral with the flywheel shaft, and each drives a gear mounted on the shaft coupled to the mill. Each of the gears is bushed and can rotate independently on the shaft. The driving connection is made by means of a gear tooth clutch, which is placed between the two gears and is mounted on the low speed shaft. This clutch member engages with teeth cut in the hubs of the gears. It is mounted slidably on its shaft which it drives by splines cut integral in the shaft. It is operated by a conveniently located lever outside of the gear case, change of speed being made instantly simply by pulling the lever over. Only one gear can be engaged with the shaft at once so there is no danger of both gears being in driving connection at the same time.

An outstanding feature is the provision for lubrication. The pump for the lubricant is driven from the high-speed shaft of the gear unit. All the bearings are supplied with oil under pressure and the gear teeth are lubricated by means of sprays from the same oiling system. It is claimed, therefore, that the gears do not churn oil. The system provides positive lubrication to every moving part, including the bushes in the bores of the wheels, these bushes being lubricated through the low-speed shaft, which is made hollow. The sliding clutch is lubricated in the same way. A thrust collar is provided on the low-speed shaft to take the thrust of the wobblers; this is also force lubricated. There is a larger strainer in the lubricating system and this strainer can be cleaned when the drive is in operation. The unit here illustrated is connected to the motor by means of a Sykes universal flexible coupling, which is also a product of the Farrel company. The second unit of the same design is being installed by the Latrobe company.

## Holds Machine Tool Prospects Good

Henry D. Sharpe, treasurer Brown & Sharpe Mfg. Co., Providence, is credited with saying that the machine tool outlook for 1926 is generally good. The immediate demand for machinery and tools may be regarded as fair, in some lines being excellent; it is generally concerned with provision for making certain specialties, in which the influence of the motor trade with its ramifications is marked. As to foreign trade,

while there has been a demand from certain foreign countries, there is not much to bank on from abroad during 1926. Continuing, he says:

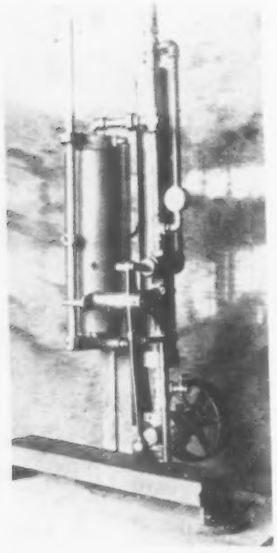
"There is keen competition in our industry, and with it is seen an increasing tendency of buyers to demand long time terms, and an increasing willingness on the part of our industry to grant them. Doubtless this is largely influenced by the marked tendency of time selling in the distribution of many of the country's products, of which the automobile is probably the most conspicuous. We believe there are plenty of signs to warrant care in making credit, with such tendencies rife."

## Small Hydraulic Bench Press

A vertical hydraulic bench press capable of exerting pressure of 2 tons and intended for broaching, straightening, assembly and other operations, has been placed on the market by the American Broach & Machine Co., Ann Arbor, Mich. The stroke of the machine is 13 in. and the ram is 2 in. in diameter. The machine is designed to take work up to 6 in. in diameter.

The speed of the ram ranges from 0 to 20 ft. per min. and is controlled by means of a conveniently located lever, the amount of pressure and speed and ram movement being obtained by pulling the lever toward the operator. The ram is returned to the starting position automatically after each down stroke by means of two springs. An automatic stop is provided for setting the length of stroke as desired. An indicating gage graduated in pounds and tons permits the operator to conveniently note the pressure applied by the machine. The cylinder is 4 in. in diameter, is of gray iron and is bored accurately to receive the piston. The oil from the pump is delivered directly on the end and full area of the piston.

The pump is of continuous-flow type and the control of the speed is through a valve connected with the operating lever. The oil reservoir is located directly over the pump. When the machine is not in operation, the oil merely flows through the controlling valve and returns to the tank. The pump, said to be made special for this machine, is capable of exerting a maximum pressure of 600 lb. per square in. The machine is set with relief valve to operate at 400 lb. per sq. in., so that the pump has 50 per cent extra capacity and does not work under full load at any time when the machine is working within its limits.

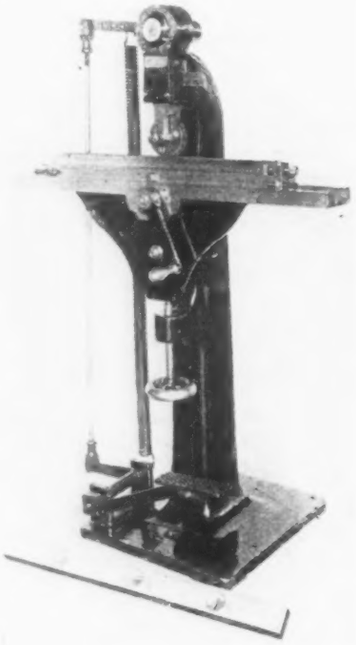


*Bench Press for Broaching, Straightening and Other Operations on Work Up to 6 In. in Diameter. The speed of the ram and pressure applied are controlled by lever, and the ram returns automatically to the starting position after each down stroke*

The driving pulley is 10 in. in diameter, 3-in. face, and runs at 300 r.p.m. A pedestal base may be provided if desired, as well as an auxiliary table, which is stressed as making the machine especially suitable for straightening. The regular table has a hole 2½ in. in diameter, bored central with the ram. With the auxiliary table work surface of 6 in. x 24 in. is available. The weight is approximately 375 lb.

## Equipment for Graduating Levels and Similar Pieces

Marking the graduations and figures along the edge of levels is the function of special equipment developed recently by the Noble & Westbrook Mfg. Co., Hartford. The machine was designed to hold a 2-ft. aluminum level and graduate the face and mark the numbers in the same operation. It is adapted for use in graduating or marking other pieces similar in form to a level, and is said to function effectively even when there is a slight variation in the thickness of the pieces. Rapid and low cost production are claimed.



*The Face of 2-Ft. Aluminum Levels or Similar Pieces Is Marked With Graduations and Numbers in the Same Operation*

The general construction of the machine may be noted from the illustration. The piece to be marked is inserted in the fixture on the table and the latter moved by means of the hand lever and rack and pinion, which passes the work under the circular die. The die, which is 12 in. in circumference, goes over the work twice, and is made to travel accurately by means of a rack and gear arrangement. Pressure of the die on the work is secured by a spring through the cam in the head of the machine. The foot treadle is depressed when the table is at one end of the machine, and is released to apply pressure on the die, after the piece to be marked is inserted in the fixture.

## All-Metal Gear Type Flexible Coupling

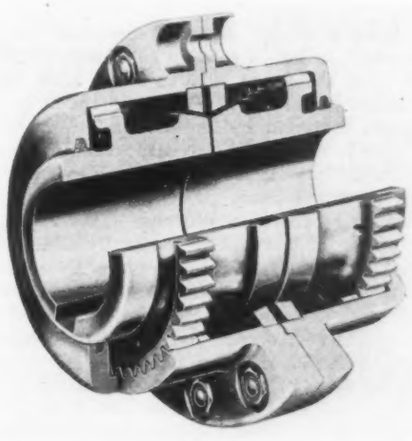
A flexible coupling made up of six parts and intended for use in compensating for the usual and unavoidable errors of shaft misalinement in all classes of connected machinery, allowing free end float to two connected shafts, has been placed on the market by the Poole Engineering & Machine Co., Baltimore.

The coupling is of all-metal, gear type, and is claimed to be self-alining without binding action at any point. Simplicity of design is a feature, there being few parts and these easy to install. Unusual strength is also claimed and protection from dust and dirt is provided. The coupling operates in either direction on continuous or reversing service and at high or low speeds.

The device is made up of six parts, two hubs having an external gear on each, meshing with internal gears in two sleeves which are bolted together, and two alining rings which are fitted in the two sleeves. The outer faces of the teeth on the hubs are formed spherically to provide a true self-alining bearing for the connecting sleeve, so that if the two shafts are out of alinement, the sleeve assumes a neutral position with a

formed and lubricated bearing on the spherical surface of each shaft hub.

Ease in lining up when the coupling and the connecting shafts are being assembled is stressed. Each hub of the coupling has a tapered surface which in turn engages with a tapered surface on the interior of each sleeve. When the sleeve is pushed back then the sleeve, hub and shaft act as a single unit, and proper alinement may be made by using a straight edge across the two flanges of the sleeves and calipers or feeler gages



*Flexible Coupling Made Up of Six All-Metal Parts. Ease of lining up, when the coupling and connecting shafts are being assembled, is a feature*

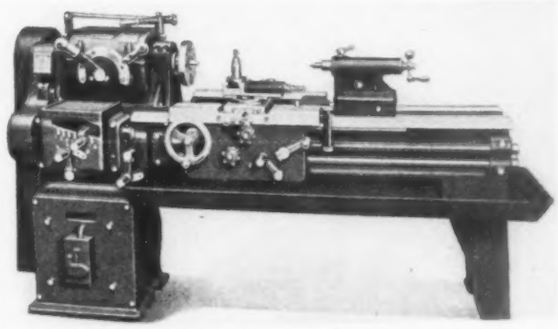
between the coupling faces. The sleeves and hub are never out of tooth engagement during alinement.

All parts of the coupling are of high carbon steel forgings. Oil holes are provided in one side of the coupling flange and oil is poured into these holes until it runs around the shaft hub. When the coupling is running the oil spreads out under centrifugal pressure so that the gear teeth are entirely submerged in oil. The couplings are available in 15 sizes, from 10.5-hp. to 5350-hp. capacity per 100 r.p.m., and maximum rated speeds range from 13,100 r.p.m. to 2400 r.p.m., respectively.

## Gear Head Lathes Arranged for Motor Drive

A geared-head engine lathe in two sizes, 15 in. and 16 in., arranged with the driving motor mounted in the cabinet leg has been added to the line of the Carroll & Jamieson Machine Tool Co., Batavia, Ohio.

Twelve spindle speeds ranging from 11½ to 393



*The Driving Motor Is Mounted in the Cabinet Lathe at the Headstock. Twelve selective spindle speeds are available through two levers on the headstock*

r.p.m. are provided, being obtained through two levers. The gears in the headstock are of chrome-nickel steel and are heat treated, the teeth of the gears being 8 pitch, stub form. Lubrication is by means of the splash system. A friction clutch and brake are operated by one lever, and changes of speed can be made while the machine is in operation. The driving motor is of 2 hp. and is mounted in the cabinet leg at the headstock end, driving through a belt.

The carriage has extra length of bearing, and a special clamp is provided to secure the carriage to the bed when doing facing work. The cross-slide and compound rest are fitted with adjustable taper gibs. The apron is of double-wall type, supporting the gear studs at both ends. Oil from reservoirs in the wall of each apron is delivered to each bearing through special tubing. A thread indicator is furnished.

All gears in the quick-change gear box are cut from the solid and all shafts run in bronze bearings, each of which is reached by an oil tube. Feeds for cutting threads from 3 to 46 per in. are obtained through the gear box and a quadrant accommodates gears for special threads. A tumbler is provided for right and left hand threads. The tailstock is of the cut-away type. The center self-discharging and the binder is of floating type. The tailstock sets over for taper turning.

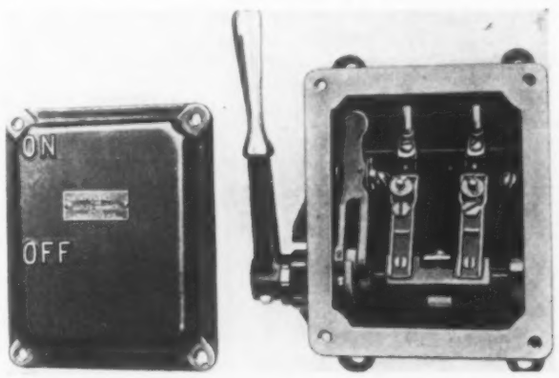
A feature of the lathe is the method of assembling the gear box and lead screw block by means of bolting them to a machined pad on the side of the bed in which is cut a master slot, a corresponding key in the parts mentioned locating them exactly in line, and interchangeably with all machines.

The machine is available with beds 6 to 14 ft. long. The distance between centers of the lathe with 6-ft. bed being 38 in. The weight of the 15-in. by 6 ft. lathe, crated, is 1900 lb.

## Water-Tight Remote Control Station

For use where electrical apparatus must be protected from moisture, acid fumes, etc., the Cutler-Hammer Mfg. Co., Milwaukee, has developed the water-tight, acid resisting remote control station shown.

The mechanism is inclosed in a cast-iron case, the




*Master Switch Arranged for Protection from Moisture and Acid Fumes*

cover of which is fitted with a gasket to exclude moisture and fumes. A stuffing gland fitted to the shaft provides a tight fit, and the thick wall of the cast-iron body allows threads for tight conduit or pipe connection.

Contact is made on the brass cylinder by two heavy fingers of standard non-stubbing design. These fingers are mounted on asbestos lumber and are zinc plated as are all other small parts. The contact tips are of heavy bar rolled copper. The fingers are of sufficient capacity to permit the use of this master control station on any pilot circuit at all commercial voltages. The handle is large and extends far enough from the case to indicate whether the station is open or closed. The case is sprayed with a protecting paint to withstand submersion in water or the effect of acid fumes.

The Wellman-Seaver-Morgan Co., Cleveland, has disposed of its motor division to Sanderson Cyclone Drill Co., Orrville, Ohio. The sale includes patterns, drawings, data and good will covering the W. S. M. marine and industrial types of gasoline motors which the company has been manufacturing in its Akron, Ohio, plant. The Sanderson company will make the motors and parts at its plant in Orrville.

# Real Wages Show Large Gain

## Common Labor Wage Rates in Iron and Steel Industry 35 Per Cent Higher in Buying Power Than in 1913— Similar Increases for Other Classes of Labor

WASHINGTON, Jan. 12.—The purchasing power of common labor in the iron and steel industry in 1924 was 34.7 per cent higher than in 1913, while the buying power of all iron and steel workers in the bar mill, blast furnace and Bessemer converter departments rose 34.3 per cent in the same period. These calculations, released to THE IRON AGE by Ethelbert Stewart, United States Commissioner of Labor Statistics, are based upon a comprehensive study just concluded.

As shown by an accompanying table, a sufficient number of employees and plants were covered by the investigation to assure representative results. The tabulation on the iron and steel industry was prepared in connection with a broad survey that has been made to determine whether average wage rates are keeping pace with the increased cost of living.

The term "cost of living" is used to mean living expenses at the standard actually found in a canvass of 12,096 families in 92 localities of the United States and is represented by the actual purchases made and the prices paid by those families in 1918. Since index numbers for purchasing power have been prepared upon the basis of wage rates and living costs in 1913, the quantities of articles bought in 1918 were adjusted to a 1913 basis. It was also assumed that the rate of wages per hour in 1913 enabled the worker to live at the standard he had then attained. In other words, the purchasing power of his wages exactly met his cost of living. The families investigated were those of workmen. No salaries over $2,000 are included.

The "cost of living" dollar is distinguished from the "commercial" dollar in a table covering the years 1906 to 1925. For the years 1913 to June, 1925, the cost of living dollar is computed from the index numbers of living costs compiled by the Bureau of Labor Statistics. From 1906 to 1912 they are based on index numbers of retail prices of food. The commercial dollar is based on a wholesale price index covering 404 articles entering general commerce. This represents the buying power of the dollar generally speaking, being measured by wholesale prices, while the other is the buying power of the dollar for purchases which are confined to household necessities. Therefore, Mr. Stewart explained, one is the dollar of commerce and the other the dollar of the home.

Turning to the iron and steel table, which covers the period 1907 to 1924 inclusive, it is shown that in 1907, while the wages of the blast furnace worker were only 88 per cent of those of 1913, his cost of living stood at 82 per cent. The relative purchasing power of his wage rates was 107.3, as compared with 100 for 1913; hence he was 7.3 per cent better off in 1907 than in 1913. In 1908 the index number of his purchasing power dropped to 100.8; in 1909, 1910, 1911 and 1912 it fell below 100 (the level of 1913). In 1914, 1915 and 1916 it was again less than 100, but in 1917 it rose to 109.6 per cent above 1913. In 1918 the index number jumped to 132.8; in 1924 it reached its high point at 148.8, a gain of 48.8 per cent over 1913. Whereas the index number of earnings in 1924 reached 254, the in-

### Real Wages in Iron and Steel Industry

Comparison of Change in Wages Per Hour in Certain Departments of the Iron and Steel Industry, and Common Laborers in All Departments, with the Cost of Living

| Year | Index Numbers of Earnings Per Hour 1913=100 | Index Numbers of Cost of Living 1913=100 | Relative Purchasing Power of Wages as Measured in Living Cost 1913=100 | Per Cent of Change in Purchasing Power of Wages Each Year as Compared with the Power in 1913 |
|---|---|---|---|---|
| [1] *Blast Furnaces* | | | | |
| 1907 | 88 | 82.0 | 107.3 | + 7.3 |
| 1908 | 85 | 84.3 | 100.8 | + 0.8 |
| 1909 | 83 | 88.7 | 93.6 | — 6.4 |
| 1910 | 87 | 93.0 | 93.5 | — 6.5 |
| 1911 | 89 | 92.0 | 96.7 | — 3.3 |
| 1912 | 92 | 97.6 | 94.3 | — 5.7 |
| 1913 | 100 | 100.0 | 100.0 | .... |
| 1914 | 101 | 103.0 | 98.1 | — 1.9 |
| 1915 | 101 | 105.1 | 96.1 | — 3.9 |
| 1917 | 156 | 142.4 | 109.6 | + 9.6 |
| 1919 | 250 | 188.3 | 132.8 | + 32.8 |
| 1920 | 283 | 208.5 | 135.7 | + 35.7 |
| 1922 | 191 | 167.3 | 114.2 | + 14.2 |
| 1924 | 254 | 170.7 | 148.8 | + 48.8 |
| [2] *Bessemer Converters* | | | | |
| 1907 | 85 | 82.0 | 103.7 | + 3.7 |
| 1908 | 79 | 84.3 | 93.7 | — 6.3 |
| 1909 | 82 | 88.7 | 92.4 | — 7.6 |
| 1910 | 86 | 93.0 | 92.5 | — 7.5 |
| 1911 | 82 | 92.0 | 89.1 | — 10.9 |
| 1912 | 90 | 97.6 | 92.2 | — 7.8 |
| 1913 | 100 | 100.0 | 100.0 | .... |
| 1914 | 90 | 103.0 | 87.4 | — 12.6 |
| 1915 | 94 | 105.1 | 89.4 | — 10.6 |
| 1917 | 151 | 142.4 | 106.0 | + 6.0 |
| 1919 | 208 | 188.3 | 110.5 | + 10.5 |
| 1920 | 241 | 208.5 | 115.6 | + 15.6 |
| 1922 | 170 | 167.3 | 101.6 | + 1.6 |
| 1924 | 227 | 170.7 | 133.0 | + 33.0 |

[1] The figures for blast furnaces cover 36 plants and 8788 employees in 1924.

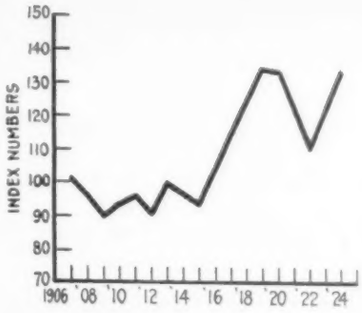
[2] The figures for Bessemer converters cover 11 plants and 1606 employees in 1924.

| Year | Index Numbers of Earnings Per Hour 1913=100 | Index Numbers of Cost of Living 1913=100 | Relative Purchasing Power of Wages as Measured in Living Cost 1913=100 | Per Cent of Change in Purchasing Power of Wages Each Year as Compared with the Power in 1913 |
|---|---|---|---|---|
| [3] *Bar Mills* | | | | |
| 1907 | 94 | 82.0 | 114.6 | + 14.6 |
| 1908 | 84 | 84.3 | 99.6 | — 0.4 |
| 1909 | 86 | 88.7 | 97.0 | — 3.0 |
| 1910 | 95 | 93.0 | 102.2 | + 2.2 |
| 1911 | 90 | 92.0 | 97.8 | — 2.2 |
| 1912 | 90 | 97.6 | 92.2 | — 7.8 |
| 1913 | 100 | 100.0 | 100.0 | .... |
| 1914 | 96 | 103.0 | 93.2 | — 6.8 |
| 1915 | 98 | 105.1 | 93.2 | — 6.8 |
| 1919 | 214 | 188.3 | 113.6 | + 13.6 |
| 1920 | 252 | 208.5 | 120.9 | + 20.9 |
| 1922 | 173 | 167.3 | 103.4 | + 3.4 |
| 1924 | 207 | 170.7 | 121.3 | + 21.3 |
| [4] *Common Laborers* | | | | |
| 1907 | 83 | 82.0 | 101.2 | + 1.2 |
| 1908 | 81 | 84.3 | 96.1 | — 3.9 |
| 1909 | 80 | 88.7 | 90.2 | — 9.8 |
| 1910 | 87 | 93.0 | 93.5 | — 6.5 |
| 1911 | 88 | 92.0 | 95.7 | — 4.3 |
| 1912 | 89 | 97.6 | 91.2 | — 8.8 |
| 1913 | 100 | 100.0 | 100.0 | .... |
| 1914 | 100 | 103.0 | 97.1 | — 2.9 |
| 1915 | 99 | 105.1 | 94.2 | — 5.8 |
| [5] 1917 | 164 | 142.4 | 115.2 | + 15.2 |
| 1919 | 254 | 188.3 | 134.9 | + 34.9 |
| 1920 | 280 | 208.5 | 134.3 | + 34.3 |
| 1922 | 185 | 167.3 | 110.6 | + 10.6 |
| 1924 | 230 | 170.7 | 134.7 | + 34.7 |

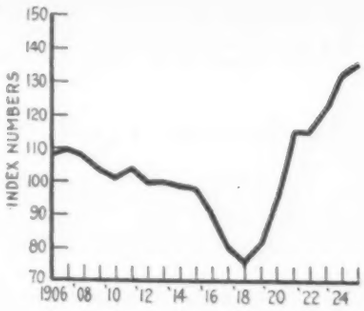
[3] The figures for bar mills cover 31 bar mills and 4569 employees in 1924.

[4] Figures for common laborers cover 183 plants and 8706 employees in 1924.

[5] Does not include laborers in puddling mills, bar mills or tin plate mills.




REAL Wages of Common Labor in the Iron and Steel Industry. Except in 1907 they were below the 1913 level until and including 1912. After 1913 there was a decline until 1915, followed by a sharp advance.




REAL Wages of Union Labor. From 1906 to 1912 they were above the 1913 level. From 1913 to 1918 there was a sharp decline, which was followed by an even sharper upswing.

dex number for the cost of living was 170.7, as compared with 100 for 1913.

The blast furnace department showed the widest swings. The trend, however, as shown by the tables, was similar for workers in the Bessemer converter department and bar mills, as well as for common laborers in all departments. The gains in purchasing power of wage rates in 1924 over those of 1913 were 33 per cent for Bessemer converter workers, 21.3 per cent for bar mill workers and 34.7 per cent for common labor.

The index numbers for wages are based on hourly rates and not annual earnings and, therefore, indicate what workers got when they worked and what their earnings would have been if there had been constant employment. Mr. Stewart's compilation likewise embraces index numbers for wage rates of union labor, and for workers in the boot and shoe industry and in woolen and cotton mills.

### Real Wages of Union Labor

*Comparison of Changes in Union Rates of Wages Per Hour and Cost of Living*

| Year | Index Number of Rates of Wages Per Hour 1913=100 | Index Number of Cost of Living 1913=100 | Relative Purchasing Power of Wages as Measured in Living Cost 1913=100 | Per Cent of Change in Purchasing Power of Wages Each Year as Compared with the Power in 1913 |
|---|---|---|---|---|
| 1906 | 85.0 | 78.7 | 108.0 | + 8.0 |
| 1907 | 89.7 | 82.0 | 109.4 | + 9.4 |
| 1908 | 91.0 | 84.3 | 107.9 | + 7.9 |
| 1909 | 91.9 | 88.7 | 103.6 | + 3.6 |
| 1910 | 94.4 | 93.0 | 101.5 | + 1.5 |
| 1911 | 96.0 | 92.0 | 104.3 | + 4.3 |
| 1912 | 97.6 | 97.6 | 100.0 | 0.0 |
| 1913 | 100.0 | 100.0 | 100.0 | 0.0 |
| 1914 | 101.9 | 103.0 | 98.9 | — 1.1 |
| 1915 | 102.8 | 105.1 | 97.8 | — 2.2 |
| 1916 | 107.2 | 118.3 | 90.6 | — 9.4 |
| 1917 | 114.1 | 142.4 | 80.1 | — 19.9 |
| 1918 | 132.7 | 174.4 | 76.1 | — 23.9 |
| 1919 | 154.5 | 188.3 | 82.0 | — 18.0 |
| 1920 | 199.0 | 208.5 | 95.4 | — 4.6 |
| 1921 | 205.3 | 177.3 | 115.8 | + 15.8 |
| 1922 | 193.1 | 167.3 | 115.4 | + 15.4 |
| 1923 | 210.6 | 171.0 | 123.2 | + 23.2 |
| 1924 | 228.1 | 170.7 | 133.6 | + 33.6 |
| 1925 | 237.9 | 173.5 | 137.1 | + 37.1 |

The purchasing power of union wage rates declined steadily from 1907 to 1910, when it stood at only 1.5 per cent above the base level of 1913. Commenting on the union worker's situation, which applied to labor generally, Mr. Stewart said: "While this (the percentage above the 1913 level) increased materially in 1911, it was entirely wiped out in 1912. Then follows a period of seven years of loss during which he either reduced his standard or drew upon any possible savings he may have had, or met the shrinking purchasing power of his wage rate by the earnings of the wife or children, or, again, he went into debt. The first of these 'seven lean years' was 1914 when his loss in purchasing power was only 1.1 per cent and probably was not seriously felt anywhere. However, by 1916 when it had reached practically 10 per cent it was felt, and in 1918 when the purchasing power of his wage rate was 23.9 per cent less than in 1913, measured by the standards of 1913, the reader can readily imagine the difficulties which faced the married wage-earner of the country.

"In 1920 there was a very marked increase in wage rates, and while the cost of living took a jump also, the spread between wage rates and living costs was narrowed almost to the fading point. Since 1921 hourly wage rates of organized workers have been going consistently up, with the exception of a break in 1922, while cost of living has not varied sharply.

"Today the average union wage rate in the United States will buy 37.1 per cent more of living on the 1913 standard than it would in 1913. The figures for 1925 cover 717,916 workers distributed through 66 of the principal cities, and 78 trades."

The foregoing refers exclusively to members of organized labor. Many will doubtless wonder whether or not this represents labor as a whole.

In an attempt partially to answer these questions Mr. Stewart applied the same methods to the employees in the iron and steel industry, manufacture of boots and shoes; the woolen industry, and the cotton industry. These are in each instance payroll figures and represent earnings for a payroll period reduced to hourly rates.

Subsequent to 1914 the wage investigations upon which the tables are based were made only in alternate years. Hence from then on the index number is for biennial periods.

The striking thing about the figures, Mr. Stewart stated, is the fact that the "lean years" for the comparatively unorganized labor in the factories occurred earlier in the period considered and were subject to more violent fluctuations than was true in the case of organized labor. He said that in order better to comprehend the figures it must be understood that the absolute rate of wages in the industries investigated was much lower in 1913 than the trade union rate. The average wage of trade unionists covered by the investigation of 1913, Mr. Stewart explained, was 45.9c. an hour as against $1.09 an hour in 1925. For a striking contrast, Mr. Stewart pointed out that the average wage in the cotton mills in 1913 was 14.8c. as against 37.2c. an hour in 1924. It will thus be seen, Mr. Stewart stated, that textile factory labor started at the base period on a very much lower level of wages, which necessarily sustained a lower standard of living. It was on the basis of that lower standard that subsequent changes in purchasing power were calculated. The hourly rates of workers in woolen mills increased 201 per cent over the rates in 1913, making an index number in 1924 of 301. Since the cost of living increased 70.7 per cent, making an index of 170.7, the apparent purchasing power of the wage rates measured in terms of the 1913 standard of living reflected a clear gain of 26.3 per cent.

### Purchasing Power of the 1913 Dollar

| Year | Commercial Dollar | Cost of Living Dollar |
|---|---|---|
| 1906 | $1.129 | $1.271 |
| 1907 | 1.070 | 1.220 |
| 1908 | 1.110 | 1.186 |
| 1909 | 1.032 | 1.127 |
| 1910 | .991 | 1.075 |
| 1911 | 1.075 | 1.087 |
| 1912 | 1.009 | 1.025 |
| 1913 | 1.000 | 1.000 |
| 1914 | 1.019 | .971 |
| 1915 | .992 | .951 |
| 1916 | .789 | .845 |
| 1917 | .564 | .702 |
| 1918 | .515 | .573 |
| 1919 | .484 | .531 |
| 1920 | .442 | .480 |
| 1921 | .681 | .564 |
| 1922 | .672 | .598 |
| 1923 | .651 | .584 |
| 1924 | .668 | .586 |
| 1925 (June) | .635 | .576 |

# Steel in Europe in 1925,—and 1926

## What the Past Year Reviewed for British, French and German Markets Suggests in Respect to This Year's Alinement

FOR the steel producing countries of Europe the past year has apparently been anything but satisfactory. As the year progressed and the French currency began its rapid decline, the French mills became the low priced sellers of Europe, occupying a position in international trade analagous perhaps to Germany of 1922 to 1923; the Germany of the valueless paper mark.

An outstanding development of the year was the increase in the number of syndicates, or ententes of producers in France and Germany—and the efforts to form large combinations that met with some success in Germany. No less important is the evident belief of the British iron and steel industry that in the formation of large corporations through which the less efficient and less profitable mills will be eliminated lies its salvation.

The keynote of these summaries of European business in 1925 and its outlook for the future seems to be keen competition for the world's markets in 1926. British mills have lost much through high costs in the face of low competitive prices from French mills, but are determined to hold their foreign markets. Germany with a large productive capacity and certain foreign markets of her own has been forced to cut below production costs to meet French and Belgian competition, but appears well organized to meet these low price conditions in 1926. French mills with a depreciated franc have built up a large export trade and with the realization that the present productive capacity of the country demands a large percentage of exports are planning to hold such business if at all possible.

## Resort in Germany to Various Steel Syndicates

CONSIDERED in its entirety, 1925 was a satisfactory year for German business. State finances and currency were established on a sound basis, large foreign credits were obtained and export trade registered adequate expansion. There was an improvement in the general employment situation, the number of unemployed dropped from 600,000 early in the year to about 400,000 toward the end, with the low point in midsummer when only 200,000 unemployed were reported. The iron and steel industry, however, views the year as rather unsatisfactory, for although production was maintained at a good level and export trade retained, prices were unprofitably low, particularly in the latter half of the year when the depreciated French franc developed the necessity for severe cutting of prices to hold foreign trade.

Despite drastic efforts by the syndicates to induce the various branches of the steel industry to curtail output, production as a whole was greater than in any other year since the war. Although German mills were faced with the competition of a depreciated franc, steel exports increased more rapidly than imports and the foreign trade balance was much better than in 1924. To accomplish this, however, domestic and export sales were made often by selling below cost of production or by admitted dumping to prevent French or Belgian competition from securing a market.

### Establishment of Syndicates and Cartels

An outstanding feature of the year and a favorable development from the producers' viewpoint at least, was the continued development and extension of the syndicates and cartels, which have placed the German iron and steel industry in a closely organized position, well adapted to meeting the expected keen competition of 1926. Despite this strengthening of national syndicates, but little progress has been made toward the formation of international syndicates for checking excessive production and unprofitable price cutting. Negotiations, however, continue, although the outlook is not favorable.

The expansion of the syndicate system, which began late in 1924 with the establishment of the Raw Steel Syndicate has brought into existence this year a number of powerful and well organized associations. In addition to the Raw Steel Syndicate, the German Steel Syndicate was formed to control railroad rolling stock, the German Tube Syndicate, uniting all tube mills, the "A" Products Syndicate to handle the sale of semi-finished material, structural steel and railroad permanent way material. This last syndicate controls total quotas of its members of 3,700,000 tons and includes the Fried. Krupp A. G., August Thyssen & Co., the Gelsenkirchener Bergwerks A. G., the Deutch-Luxemburgische Bergwerks, the Phoenix A. G. and nine other large corporations. Other syndicates established during the year were the Thick Sheets Syndicate, Wire Rod Syndicate, Bar Syndicate and a Band Syndicate. Producers of thin sheets were unable to agree on the formation of a syndicate to control their product.

### Little Progress in International Agreements

While there was considerable negotiation toward international agreements, there were but few tangible results. An agreement was made with French mills by which German consumers will annually take a stipulated tonnage of French iron, steel and rolled materials, but the agreement does not become effective until a Franco-German Commercial Treaty has been negotiated. An agreement with Belgian wire rod mills was reached, by which it is hoped disastrous competition in this product will be prevented. Late in the year negotiations with French, Belgian and Czechoslovakian tube interests were resumed.

Considerable progress was made in the movement toward large combinations of producers. In Upper Silesia an old plan was finally realized in the merging of the Linke-Hoffman-Lauchhammer Co., the Oberschlesische Eisen-Industrie Co. and the Oberdedarf-Donnersmarck Co. Negotiations also began toward the establishment of a great Western Steel Trust, which, if formed, would have a total capital of 800,000,000 marks. The object in view in the forming of such an organization is standardization, division of labor and production and general economy of operation. Included in the negotiating companies are the Deutsch-Luxemburgische Bergwerks, Gelsenkirchener Bergwerks A. G., Bochum Steel Co., Phoenix A. G., Aug. Thyssen & Co., Rheinische Stahlwerke. The Krupp interests were originally interested in the negotiations, but later with-

drew. Including the Krupp works, a combination of these companies would control 7,717,000 tons of steel production, or more than half the combined quotas of the Raw Steel Syndicate.

Another development of 1925 was the resumption of publication of accurate production statistics. The Raw Steel Syndicate operated throughout the year, allocating tonnage according to conditions in steel markets. With 90 per cent of full capacity permitted early in the year, rationing became more severe as the year progressed, dropping to 65 per cent and finally in the closing months of the year to 35 per cent of capacity.

# France Has Problem of Maintaining Exports

INSTABILITY of the French franc has been the outstanding feature of the French iron and steel markets during the past year. Domestic demand has been of only moderate proportions, but the producers' "ententes" proved valuable as a means of maintaining prices, particularly in the second half of the year. In export business, the depreciation of the franc placed French sellers, particularly toward the end of the year, in a privileged position. Depreciation of the currency, however, has had its adverse economic effect, for although it has developed large export business the cost of living has risen and the lower purchasing power of the franc has seriously increased industrial costs. While mills are selling at low prices to compete in foreign markets the domestic market feels the result in increased costs and prices maintained at a higher level.

Coke production registered an increase in 1925, the output for the first 10 months being 4,900,000 metric tons. In addition 4,189,510 tons of coke was imported in the first 10 months. Exports in this same period totaled 370,464 metric tons, which brings the total French consumption of coke, both imported and domestic to about 8,700,000 metric tons.

During the greater part of the year the average monthly production of iron ore was 2,870,000 metric tons, based on which an estimate of production for ten months of the year would total about 28,700,000 metric tons. During this same 10 months imports of iron ore totaled 139,000 tons and exports, 7,970,000 metric tons, showing the French consumption to have been about 20,869,000 metric tons.

When demand for ore was at a low ebb, the restricted production was apparently of small interest, but with the reestablishment of the steel producers' entente and the increase in pig iron production, it is being urged in many quarters that production of Lorraine ore should be increased. While the larger part of these ores is consumed in Lorraine and other sections of France, a sizable tonnage goes to Belgium and German consumers, who refrained from purchasing French ore during the Ruhr occupation, are gradually returning as purchasers of Lorraine ore. There is also some exportation of Lorraine ore to England but as transportations costs from Briey to the North Sea have increased considerably, this business is not expected to continue.

### Pig Iron Output Increased

Of 220 existent blast furnaces, 141 were in blast by the end of the year, compared with 135 in 1924. Total production of pig iron including basic, Bessemer, foundry, forge and special grades was 6,983,657 metric tons for the first 10 months comparable to 6,357,821 metric tons for the same period of 1924. Ingot production shows a similar increase in the past year, the output for 10 months being 6,109,467 metric tons compared with 5,743,443 metric tons in 1924.

### Heavy Steel Exports

Exports of iron and steel are undoubtedly the outstanding feature of the year in the iron and steel industry of France. The total exports of all iron and steel products for the first 10 months of 1925 had increased by close to 800,000 metric tons over the 1924 exports. Much of this increase in tonnage was in semi-finished material, bars, wire rods, hoops, sheets and rails. The part played by the United States as a consumer of French exports is worthy of note. Of total export shipments of pig iron of 552,601 metric tons, only 3000 tons went to the United States. In semi-finished products and bars American consumers took slightly more than 8000 tons, only 3,850 tons of rails, but nearly 20,000 tons of castings. These figures, however, are hardly representative of actual totals of shipments to the United States, as shipments of iron and steel through Antwerp are credited by the French customs to Belgium.

### Britain a Good Customer

Based on statistics of exports that are available now, the United Kingdom was the best customer of French pig iron producers taking 119,000 tons compared with Italy's 116,000 tons, Germany's 85,000 tons and Switzerland's 41,500 tons. On semi-finished material and steel bars the United Kingdom again led, taking 352,000 metric tons with Germany second taking 310,000 tons, Italy third taking 170,000 tons and Switzerland fourth with 99,000 tons. Japan was the foremost among purchasers of rails with 272,000 tons, Germany second with 19,500 tons, the United Kingdom third with 16,100 tons and Switzerland fourth with 13,900 tons.

One noteworthy development in French steel production that manifests itself in the exports and imports of the country is the change in the sheet market. While France was formerly an importer of steel sheets, the agreement in the past year among sheet mills to mainton prices and eliminate disastrous competition has permitted the exportation of sheets.

### Associations Gain Strength

The formation of ententes or associations of producers of various products has been progressing rapidly throughout 1925. The entente of phosphoric pig iron producers grew stronger during the year and by September was able to inforce the observance of base prices and dictate selling conditions. An association that has united the phosphoric and hematite iron producers, the manufacturers of rolled steel products and the sheet mills was formed later in the year as a result of the negotiations with German producers for an agreement. This organization with the title "Office de Statistique des Products Metallurgiques" has worked toward inducing its members to observe the base prices and selling conditions agreed upon by their respective ententes. Efforts are now being made to unite all producers of steel products into an association for the same purpose.

### Prospects Not Bright

In spite of the heavy export business that is still being transacted in practically all iron and steel products and the undoubtedly firmer grasp on the price situation and selling conditions by producers, prospects for the near future are not of the best. The volume of domestic business has improved somewhat as the year draws to a close but as only a small part of the present purchasing by domestic consumers is apparently going into immediate consumption, mills anticipate the early difficulty of selling to consumers with sizable stocks for their early 1926 requirements.

Additional problems are presented in the possibility of continued depreciation of the franc, heavier tax burdens upon French industry and higher costs of produc-

tion. Inasmuch as the French iron and steel industry today must export a large part of its production, estimated in some instances as high as three-fifths of the total, the maintenance of such a high level of foreign trade is offering a genuinely serious problem for solution in 1926.

# British Found 1925 a Year of Loss

THE British iron and steel industry in 1925 passed through one of the most miserable years of its existence. It is doubtful that any former year was as unprofitable and it seems scarcely conceivable that another year of such depression can occur without bringing a considerable proportion of the steel business to the verge of bankruptcy. The markets of 1925 opened at prices which were then considered to be quite as low as was compatible with post-war conditions, and it was confidently expected that the worst had been experienced and the corner turned. This confidence in the future was not borne out, for the selling prices of pig iron and of manufactured steel declined steadily in the face of a decreasing demand.

In Great Britain production costs probably vary more than in other iron and steel producing countries, especially more than in the United States, one reason probably being that the practice of scrapping obsolete machinery is not so common here as in America. As a result there is not the same general resistance of sellers to a fall in prices to a point below actual cost. Some of the better equipped steel mills in the United Kingdom have been able so to reduce expenses as to minimize the loss involved by low selling prices, but these are few in number.

### Mergers Believed Essential

Continuation of the present conditions for another year will force upon the iron and steel industry the absolute necessity of a closer combination of interests, leading to the abandonment of the less profitable works, so that all the business available may be dealt with by the more effective producers. This change would no doubt strengthen the industry as a whole, but bringing it into a smaller compass, commercial competition would be considerably reduced, perhaps to the detriment of the consumer. There have been several attempts in the past to restrict unlimited competition in the steel trade, but hitherto such attempts have always failed under stress of declining markets. Consequently greater attention to the elimination of obsolete equipment would be of great assistance, for as long as an order leaves a 10s. per ton loss to one establishment and gives a 10s. per ton profit to another, as is sometimes the case, it is almost impossible to make mutual agreements.

While 1925 was probably the worst year that the British iron and steel industry has yet experienced, there are indications that the threatened bankruptcy of a large part of the trade is forcing steel men to consider agreements and mergers that they have refused to discuss in the past. One of these plans would be an amalgamation of all interests, so that the less efficient works might be scrapped without too great individual loss and the more efficient kept fully employed.

The extremity of the present difficulties of the steel industry has induced many to urge some measure of protection and proposals to this effect are now being considered by the Government. That such proposals will result in some protection does not appear at all improbable in the present temper of the trade.

### Losses on Finished Steel

The most unprofitable branch of the steel industry during the year has undoubtedly been the market in finished products. Only two grades of finished material have earned respectable profits, sheets and boiler plates. Boiler plate prices have been maintained by agreement until they stand at about £4 10s. per ton above the current prices for ship plates, although the normal difference is only about 20s. per ton or at most 30s. This is proving something of an object lesson in the power of combination to maintain prices, and may lead to an attempt to apply this method to other products.

The production of pig iron was not entirely unprofitable during the first half of 1925 but the total fall in prices during the year amounts to fully 15s. per ton, and as there has been no corresponding decline in production costs, what was a fairly profitable industry in January has been a source of loss in December. Here, as in the steel industry, a wide variation of production costs appears, the heaviest losers being the merchant furnaces. As a result, mergers that would combine coal fields, coke ovens, blast furnaces and iron and steel works are considered possible developments of the future.

Throughout the year there has been a gradual closing down of blast furnaces, coke ovens and steel works and, although here and there works which have been idle for months have been started again, production in Great Britain is smaller than at any time during the last half century. When it is considered that world requirements of iron and steel are greater than ever before, the conclusion is inevitable that world markets are slowly receding from the British steel industry.

A comparison of the selling prices of iron and steel at the beginning and end of 1925 serves as an illustration of the increasing difficulties which have confronted British manufacturers. The following brief table compares prices of January and December, 1925, in a few products:

| | January, per Ton | December, per Ton |
|---|---|---|
| Scotch pig iron | 90/– | 78/– |
| Cleveland pig iron | 81/– | 66/– |
| Basic pig iron | 80/– | 65/– |
| Marked bar iron | £15 | £14 10s. |
| Steel bars | £8 12½s. to £9 17½s. | £7 to £8 10s. |
| Billets | £7 | £6 |
| Ship plates | £9 to £9 10s. | £7 5s. to £7 10s. |

While a fall of prices in 1926 equal to the decline in the past year is out of the question, as values would be at such a level as to stop production, recovery of prices, although possible, seems unlikely. The difficulties of the trade are principally with labor and fuel and it is considered probable that very serious labor disturbances will develop when the subsidy granted to the coal trade comes to an end. Without this subsidy the coal industry cannot bear the present wage scale, and it is believed almost certain that a prolonged struggle will ensue before a settlement is reached. This is perhaps the principal objection to the hope of more profitable trade in which some are indulging for 1926.

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## Coal Mining Machinery Bought for Russia

The Russian Information Bureau at Washington announces that $2,000,000 worth of American coal mining machinery has been purchased for the working of mines in Soviet Russia by a technical commission which has returned to that country after a visit to America, Germany and England. With the aid of the new equipment it is planned to increase coal production in Russia about 43 per cent this year.

The bulk of the equipment purchases, including 150 of the 196 coal-cutting machines acquired, will be shipped from the United States. Other American equipment included electric mine lamps, automatic appliances for drawing mine cars, automatic equipment for closing mine doors, etc. The terms given by American manufacturers, the report states, were 60 per cent in cash and 40 per cent in five months. Some of the American equipment has already been shipped.

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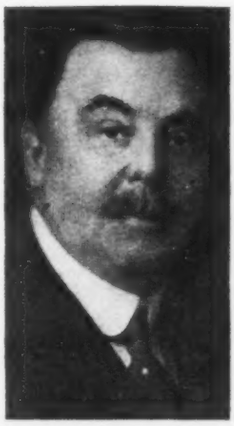
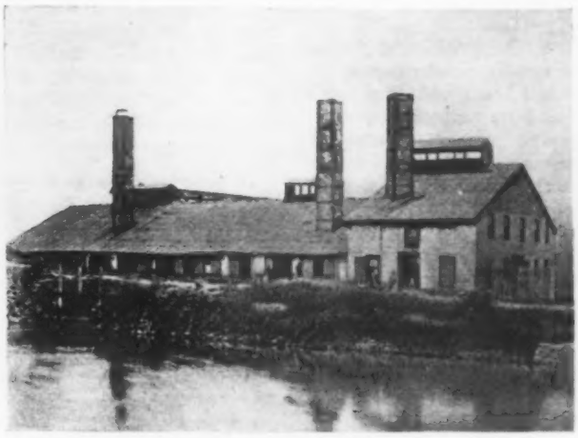
For making railroad spikes the West Virginia Rail Co., Huntington, W. Va., has bought of the Chapman-Stein Furnace Co., Mt. Vernon, Ohio, a furnace for heating rods and a car type spike annealing furnace rated to take 10,000 lb. of railroad spikes per charge. Natural gas will be used for fuel.



*Richard G. Wood, formerly chairman of the board*

Original Sheet Mill at Conshohocken, Pa.



*Howard Wood, Jr., who has just retired from the presidency*

# SPANS A CENTURY

## Alan Wood Iron & Steel Co., Philadelphia, Celebrating 100th Anniversary

The Alan Wood Iron & Steel Co., Philadelphia, has sent out announcements of the celebration this year of its hundredth anniversary. The business was founded in 1826 by James Wood and his son, Alan, who leased for five years a small water mill near Wilmington, Del., which had been used prior to that time for the manufacture of nail plates. The firm, known as James Wood & Co., bought its iron in the form of bars from American, English and Swedish mills. At that time soft steel bars cost $125 a ton, while American iron bars were sold at approximately $100 a ton and Swedish iron bars were $102.50. The Wood plant employed eight or 10 men, who were given their board, costing about $2 a week, and $5 a week in cash.

*Ledyard Heckscher*

By 1828 the iron works was rolling sheets ranging in gage from No. 27 to No. 10 and on occasion rolled small steel ingots into circular saw plates. In 1832 it erected a mill for rolling iron at Conshohocken, Pa., and soon afterward the Delaware plant was abandoned. The Conshohocken mill started rolling sheets on May 5, 1832, and since that time the partnership and its successor, the Alan Wood Iron & Steel Co., have been prominent in the sheet-making industry.

In 1835 the firm built a shovel factory. On Jan. 1, 1840, James Wood sold his interest to William W. Wood, who continued the business in association with Alan Wood under the title of A. Wood & Brother. This partnership was dissolved one year later and the firm was again conducted by James Wood and his son, Alan, under the original title of James Wood & Son, and the Delaware works was again operated, being in charge of John Wood, a brother of Alan. Here a series of experiments in the making of Russia sheet iron was undertaken, which resulted in the awarding of a silver medal by the Franklin Institute in 1842.

In the following years there were readjustments of interests in the firm. James Wood retired from business in 1848, after which the mills were conducted by his sons, John, William W., Thomas C. and David L. Wood. The title of the firm then became J. Wood & Brothers. James Wood died in 1851.

The firm was incorporated as J. Wood & Brothers Co. in 1886. John Wood became president. In 1857 Alan Wood, in partnership with his brother-in-law, Lewis A. Lukens, grandfather of William W. Lukens, formerly president of the Alan Wood Iron & Steel Co., founded the firm of Alan Wood & Co. and started the present Schuylkill Iron Works at Conshohocken.

By 1901 the Alan Wood company had attained an annual production of 25,000 tons of sheets and light plates of both iron and steel. At that time billets were hard to procure when business was brisk and the company was at times obliged to import them. The need of a steel plant was urgent and in the latter part of 1901 the Alan Wood Iron & Steel Co. was incorporated. Richard G. Wood, his son, Alan D. Wood, and brothers, Alan W. and Thomas D. Wood, who had been interested in the W. Dewees Wood Co., which had a plant at McKeesport, Pa., became interested in the Alan Wood Iron & Steel Co. The company purchased land at Ivy Rock, Pa., and began the construction of a steel plant of five 55-ton open-hearth furnaces and a 35-in. blooming mill. On July 1, 1903, this company took over Alan Wood & Co., thus combining the Schuylkill Iron Works and the steel plant in one ownership.

The history of the company since then has been one of steady though conservative growth. Present officers are: President, Ledyard Heckscher, who has just been elected to succeed Howard Wood, Jr., who has retired on account of ill health; vice-president and treasurer, Alan D. Wood; secretary, John W. Logan. Richard G. Wood, for many years president of the company, is now chairman of the board of directors; H. C. Thomas is general manager; Charles O. Hadly, general manager of sales; Frank E. Lloyd, manager of steel department; Vincent P. Wood, manager of sheet department; G. A. Heckscher, manager of blast furnace department.

## New Harvester Company Formed

SAN FRANCISCO, Dec. 30.—Formation of the Western Harvester Co. to manufacture and sell Holt combined harvesters, with headquarters at Stockton, Cal., has been formally completed. The new corporation will have a capitalization of $3,000,000, of which $2,000,000 will be outstanding. It will be a subsidiary of the Caterpillar Tractor Co., though the personnel will be entirely separate. The Stockton plant will be operated exclusively in making all types of farm implements. The board of directors and president of the new company will be announced in January. Estimates place the probable productive capacity of the new organization at 1000 tractors a day.

# MANAGEMENT OVERDONE

## Shortcomings in Office Control with Foremen Having Limited Authority

That so-called Middle West manufacturing plants in general have a tendency to overdo production management and its ramifications and that New England's traditional conservatism has stood its manufacturers in the time of need in this respect was the theme of Gorton James, Harvard Business School Administration, Industrial Management Department, in an informal discussion at the January meeting of the Boston branch of the National Metal Trades Association on Wednesday evening, Jan. 6, at Young's Hotel, Boston.

His observations in the Middle Western plants lead him to believe that control of work through the office by schedule is not always operative, because departmental heads allot work to men best fitted for jobs regardless of the office ratings and schedules. Functional foremanship works out to the advantage of management and production, according to Professor James, only in those cases where foremen are given authority to direct work; not when two or three men in a department have executive jurisdiction.

Standards, in his opinion are necessary in any manufacturing plant or industry, but they can be made effective or defective, depending on methods employed in arriving at the standards. Professor James has lost a good deal of confidence in stopwatch methods of standardization, particularly when the company in establishing such standards employs young and inexperienced men to hold the watch. He is beginning to have his doubts about the right of scientific management to use capital letters.

Speaking of the Taylor system of management, Professor James said he believes Mr. Taylor did industry a lot of good and would have continued to do so had he extended his work. But in his opinion some of the men who have carried on Taylor's work have done industry a lot of harm. Conservatism has its dangers, however, and Professor James says that New England must awake to the importance of proper standardization and the urgent need of a lot more of it.

### New England's Favorable Location

In his opinion too much publicity has been given to the question of "What Is The Matter With New England?" One of New England's greatest troubles, he said, is the fellow who is asking the question. Whatever troubles these States may have, they are more or less special and do not involve the States as a whole. The geographical location of New England is favorable, reports to the contrary notwithstanding. Some New England industries have been overproducing, because other sections of the country are growing and supplying wants heretofore purchased in New England. On the other hand, she is ideally located for export business. Boston is 70 miles nearer South America than New York, and possibly some day may regain its importance as a producer of iron and steel, when the cream of the Lake Superior ores are used up; when furnaces will have to depend to a greater extent on northern and Brazilian ores. The establishment of the Mystic Iron Works at Everett, Mass., may be the forerunner of other furnaces in New England.

# WASTE ELIMINATION

## Move to Secure Casting Weights on Blueprints —Concrete Bar Simplification

WASHINGTON, Jan. 12.—The question of securing the showing of weights of castings on blue prints sent to foundries for estimate is being considered by Director W. Chattin Wetherill of the Committee on Metals Utilization, Department of Commerce. Before proceeding with the question, however, the department is anxious to obtain an opinion from the industrial groups interested and has sent letters to them asking for an expression of their views. In the event sufficient desire is expressed that the department actively take up the matter with a view to having the practice adopted, Mr. Wetherill says the department stands ready to cooperate.

The proposal was originated by the Steel Foundry Society of America and the American Malleable Castings Association, though it was early agitated by Thomas E. Durban, Erie, Pa. The two organizations have solicited the aid of the Department of Commerce in this project in view of the industrial waste, which, it is stated, could be abolished by the adoption of the suggestion and in recognition of the fact that no progress can be made unless it be national in scope.

Announcement also has been made of two important meetings of interest to the reinforcing concrete bar industry on Jan. 26 by the department. One will be a revision conference to consider what further changes should be made in the simplification program adopted on Sept. 9, 1924, when 44 sizes, covering cross section areas, were reduced to 11. The second conference will consider whether it is possible to adopt one of the existing standard specifications for new billet steel bars from which reinforcing bars are rolled. The revision conference also will be asked to consider tentative recommendations covering the simplification of steel spirals, which has been prepared by the Concrete Reinforcing Steel Institute. The conference on specifications will be the second conducted by Director Wetherill. It has been pointed out that there is almost no uniformity in material specifications for reinforcing bars. It is maintained that the adoption of a standard specification would at once make a further sweeping reduction in stocks of distributers as well as have a far-reaching effect on the industry.

One result of the simplification program, in which the Division of Simplified Practice cooperated, has been the release of an investment which the division estimates at $4,500,000 which was formerly required by dealers and distributers in stocks of the sizes of reinforcing bars which were eliminated.

## Electric Power Production Makes New Records

November production of electric power by public utility plants in the United States is reported at 5772 millions of kwhr., compared with 5936 millions in October and 5490 in September. Both October and November recorded increases to 14 per cent above the corresponding months of 1924. Figures for both months are higher than for any previous month in the history of the industry, while the average month of 1925 bids fair to excel the highest month of any preceding year. In only one month of previous years has the total reached a figure equal to the lowest month of 1925.

## 1127 New Locomotives in 1925

WASHINGTON, Jan. 9.—Railroad locomotives shipped in December totaled 104 and for the calendar year they amounted to 1127, according to the Department of Commerce. Of the December shipments 86 were for domestic and 18 for foreign use. For the year the domestic shipments totaled 813, while foreign shipments were 314.

The Boston chapter of the American Society for Steel Treating was the guest of the Mead-Morrison Co. and the Gilman Mfg. Co., Prescott Street, East Boston, on Friday afternoon and evening, Jan. 8. During the afternoon the various departments of the two plants were inspected. In the evening the Mead-Morrison Co. presented two films, the "Bear Tractor," and "Coal Handling Machinery." Dr. G. B. Waterhouse, Massachusetts Institute of Technology, delivered a technical abstract on coal handling machinery, and George Gilman an illustrated talk on rock drilling machinery.

# Car Service Aids Marketing

## Improved Car Distribution and Expedited Movement of Traffic Profoundly Affect Iron and Steel Industry—Cooperation Bears Fruit

BY L. W. MOFFETT*

FAR-REACHING changes have occurred in marketing industrial and agricultural products within the past three years. Iron and steel and related lines have shared prominently in the benefits resulting from the distinct evolution that has taken place. Deliveries more prompt than under the old order have become the commonplace rather than the exception even when plant output is high. The consumer of iron and steel rests more easily and is subject to less worry and confusion when placing orders. Moreover, he has reduced the interval between placing business with the mill and shipping and realizing on the finished product. Inventories have been reduced, overhead has been cut, and business stability fostered. The interests of the producer, as well as the consumer, have been subserved. The savings to all concerned, if they could be calculated in dollars and cents, would reach a total that would be little short of startling.

### Synchronizing Transportation with Industry

Back of it lies the synchronizing of the transportation machine of the country with the industrial and agricultural machine. The idea, now that it has been proved practicable in actual operation, strikes one as simplicity itself. Yet to make it effective requires constant watchfulness and unflagging cooperation, together with assiduous study of the requirements of commerce. These things have been and are being done with remarkable accuracy, so that advantages automatically redound to the railroads, agriculture, industry and the public.

This system of cooperation and its benefits, like many other great things, grew out of the school of bitter experience. It arose from the tortuous task the railroads faced in unscrambling themselves when, on March 1, 1920, they were returned to their owners by the Government. It is so axiomatic as to be trite to say that when transportation breaks down it carries with it industry and agriculture and the very life of the nation. Hence, when the railroads were earning much less than 1 per cent of their value, with costs high and equipment scattered to the four corners of the country, industry and agriculture also were in a state of perturbation. So-called car shortage, car congestion, lack of motive power and other ills were the order of the day, although actually the difficulty lay largely in the absence of proper and timely distribution of equipment. It was not long after they were returned to their owners, a matter of only a few months, that the railroads, like industry and agriculture, faced a sharp drop in commodity prices. Reduced tonnage was the consequence for the railroads. This condition extended throughout 1921. The carriers had neither money nor opportunity in 1920 or 1921 to readjust their broken-down machine. In 1922 the corner seemed to have been turned, but on April 1 the strike of bituminous coal miners was called, and following it, on July 1, came the railroad shopmen's strike. These two disturbances imposed new demands on the already greatly burdened transportation machine and delayed plans for its rehabilitation and for constructive contact with the public. This condition continued up to 1923.

### Car Service Plan Eliminates Car Shortage

It was on April 5 of the latter year that a plan was launched which a few years ago was hardly conceivable. The so-called car shortage of the past actually has become non-existent since that plan was put into operation. It has not been so much by reason of a greater amount of equipment, or car loading efficiency, as because of a really scientific distribution and movement of equipment. The marketing system of the country really has become greatly expedited and changed, much more so than the general public realizes. The effect this has had on industry, including such prominent branches as iron and steel, machinery and foundry, has been far-reaching and gives every appearance of being definitely established.

### Buying of Steel Is Limited to Early Requirements

Buying of iron and steel, as well as other commodities, has become more nearly coordinated with immediate requirements. The change perhaps has had temporary effect on so-called "backlog" business and has called for readjustment of rolling schedules. But, it has been pointed out, under the new system bookings of today are much more real, much less subject to cancellation, and give a closer relationship to production and consumption than ever before. Leading from these elements, it is contended, is a reduction in costs, accruing from lower overhead expenses, diminished inventories, and greater market stability. Better anticipation of what lies ahead was also made possible, it is argued, thus providing a more dependable guide as to rate of operations, the size of stocks, etc.

Better car distribution was the idea of the railroads through the American Railway Association. On April 5, 1923, that body adopted a definite program for physical rehabilitation and for setting up regional advisory boards. There now are 14 of them. They are composed solely of shippers and receivers of freight—representatives of industry, farmers, merchants and the public. It was the car service division of the association which solicited the cooperation of these interests in anticipating car and transportation requirements so that the service programs might be formulated to take care of all traffic movements as they arose. The splendid performance of these boards already has made a long and interesting history, and it has been detailed rather widely. It is the purpose here, however, to point out what the results have been in the development of the transportation facilities of the country both through the initiative of the railroads and the work of these boards, and the effect on industry in producing, selling and marketing.

These have been well stated by one of the leaders in the movement to set up the boards, Donald D. Conn, manager Public Relations Section of the Car Service Division.

"The more the boards studied the matter the more they realized that the volume of transportation to meet requirements of commerce is as much governed and measured by distribution methods, trade practices, industrial facilities and market conditions as it is by the actual volume of transportation itself," said Mr. Conn.

### Cooperation Between Shippers and Railroads Yields Results

He cited many examples of remarkable performances that have come about as the result of the common sense plan of cooperation between the shippers and public on the one hand and the railroads on the other. No longer do the railroads have to await the cry of distress from a region suffering from car shortage. Instead the cars are at hand as the result of the work and advice of the boards, which are voluntary organi-

*Washington representative, THE IRON AGE.

zations purely, not alone for the purpose of maintaining improved transportation, but for studying market conditions, commodity distribution and many other matters of common interest. The Interstate Commerce Commission in three consecutive reports to Congress has indorsed these boards, as have also President Coolidge, Secretary of Commerce Hoover and virtually every large trade and farm organization in the country. More contracts with Government organizations are being established and it was only recently that commendation of the boards was given by the Federal Reserve Board, which adopted a resolution, an unusual thing for that body, to pledge its support insofar as its powers permit. The relation between timely distribution of industrial and agricultural products and finance, including credit and capital, is distinctly close. That these have been greatly affected by the work of the advisory boards is a matter of importance to the Federal Reserve Board.

The regional boards were described by Mr. Conn as a medium of contact between production, consumption and their connecting link, transportation. In the days of unscrambling the railroads, car shortages and surpluses, Mr. Conn explained, had come almost with the regularity of the tides.

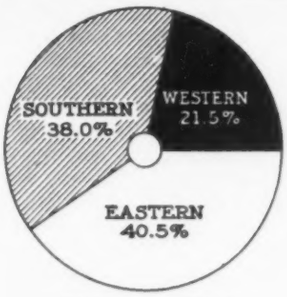
"Shippers felt they were entitled to cars," he declared, "and when they were not forthcoming promptly felt it was the railroads' fault, or that some unseen power was working to manipulate markets by interfering with the movement of products to market. The railroads contended they were doing their best to meet the situation. Immense blocks of capital were tied up in cars that were in use but part of the time. Some means were necessary to convince shippers and receivers of freight that, while they should have transportation when they wanted it, their active aid was necessary to bring about this happy result. There was the conviction that shippers and receivers were doing very little to speed up transportation. If a shipper needed five cars, he called for 10. No incentive toward increased ownership of cars by individual lines was provided by shippers through so loading that the owning line received the benefit of loaded haul from its own cars; if demurrage amounted to less than the cost of unloading, warehousing and delivery from warehouse, cars were used as warehouses until the contents were sold, and other shippers suffered in consequence. It was felt that this situation was not of definite intent, that it was merely due to thoughtlessness or lack of education.

"The road had, in addition, as a legacy from the war period and, in fact, a decade or more prior to the war, the increasing tendency to turn to the Government for an answer to all problems. The spontaneous desire of all business, as well as the railroads, to arrest this process, and to remove the necessity of adjudicating their differences through Governmental and regulatory channels, crystallized a nation-wide demand for some form of cooperative effort between the railroads and their users which would not only tend to solve the vast and intricate transportation problem affecting the country, but would also bring industry, farmers, shippers and receivers into closer communion for the promotion of the business welfare of each territory."

*Map Showing Density of Population in the United States. The large section designated "Western" has only 16 people per sq. mile, as against 140 per sq. mile for "Eastern" territory and 46 for "Southern" territory*

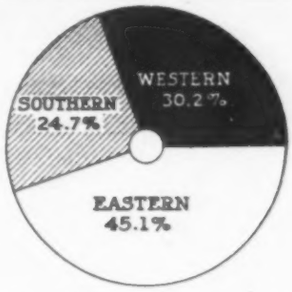
### Car Requirements Forecast with Remarkable Accuracy

The results, Mr. Conn said, are beyond any visions of the pioneers of this work. Since the board movement is voluntary, its success, or that of any of its committees, one for each industry in the respective sections throughout the country, calls for the support of the public and cooperation of each industry. Perhaps the most outstanding results of the work of the boards relates to movement of crops at the best period for the agricultural interests both as to prices and stability of market, but they have been marked in all other lines. Having the exact number and kinds of cars for a given section at a proper time is one of the underlying principles of the work. Forecasts made by committees for the different industries as to car requirements for the succeeding three months have been little short of amazing in their accuracy. The quarterly forecasts are made to accord with meetings of the regional boards, which hold sessions once every three months. The Car Service Commission is provided in advance with these forecasts and thereby is able to arrange the




Bituminous Coal

Iron Ore




Total Products of Mines

Refined Petroleum

*Of the Total Number of Carloads of Different Classes of Freight Originating in 1924, the Three Sections of the Country Shared in the Proportions Indicated by the Diagrams*

Manufactured and Miscellaneous Products

transportation needed. Merely as an example, similar to many others, is the estimate of one committee that 25,300 cars would be required for the loading of vegetables and melons from Sept. 1, 1924, to Feb. 28, 1925. It actually turned out that the committee had underestimated requirements by only 323 cars. This also indicates that committees, after canvassing industries closely, supply the carriers with a conservative estimate and eliminate exaggeration calling for more cars than are needed, causing expense and congestion and other undesirable results.

The coal movement notably has also profited by campaigns through the medium of the boards to effect a greater volume of purchases and delivery during dull periods than in previous years, thus equalizing the use of equipment and stabilizing market conditions for both coal consumers and operators. Similar plans, it is contended, may also be applied to many other materials not susceptible to deterioration while in storage. The primary purpose of the boards was to improve railroad service in local communities, but they have also developed a better understanding of economic and distribution questions between shipper and carrier.

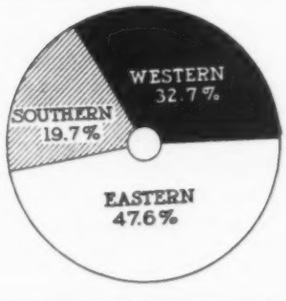
### Iron and Steel Committee Foresees Business Expansion

Typical of reports made by committees is the following by the Iron and Steel Committee of the Atlantic States Shippers" Advisory Board which, submitted on Oct. 8, 1925, reflected in advance the improvement in the industry which set in:

> The Iron and Steel Committee is of the opinion that car requirements will be greater for the last quarter of 1925 than during the third quarter of this year, or for the last quarter of 1924. No figures as to the actual number of cars expected to be loaded can be given because so many factors may affect the situation one way or another. One member who ships a considerable tonnage estimates an increase of 15 to 20 per cent for the last quarter compared with the preceding three months. Another estimates an excess in requirements of 10 to 15 per cent over the last quarter of 1924. Still another believes from present indications the increase will be about 10 per cent. There appears therefore reasonable grounds for saying that there is little likelihood of any falling off in the demand for cars for iron and steel shipments for the remainder of this year.
>
> Railroad service continues to be satisfactory and we see nothing in the near future that is likely to interfere with the railroads furnishing adequate car supply.
>
> N. L. MOON, Chairman.

### Larger Cars and Locomotives Also Factors

It has been these forecasts, together with the providing of the cars at the proper time, and their expedition in transit back and forth, that have brought about the handling of greater traffic than ever before. The new equipment bought, the larger loading capacity, increases in trainloads, greater tractive power of locomotives, necessarily have been important factors, but the outstanding improvement is due to the scientific handling of equipment. Division of the countries into regions, surveys showing the precise production for each division, the part raw materials play to the finished product, the seasonal timeliness for supplying cars of the types needed—these are the big things. They have made it possible for the railroads to break records week after week in continued heavy loading. Up to the week of Oct. 23, 1925, the railroads reached the thirteenth million-car week, meaning 1,000,000 cars of revenue freight loaded for transportation. Up to the week of Oct. 30, there were more than 41,000,000 cars of revenue freight loaded and transported, the greatest loading the carriers ever handled. They have absorbed all loading that is offered. According to an estimate recently made, there is a saving in the value of commodities of $250,000,000 to $400,000,000 a year in inter-



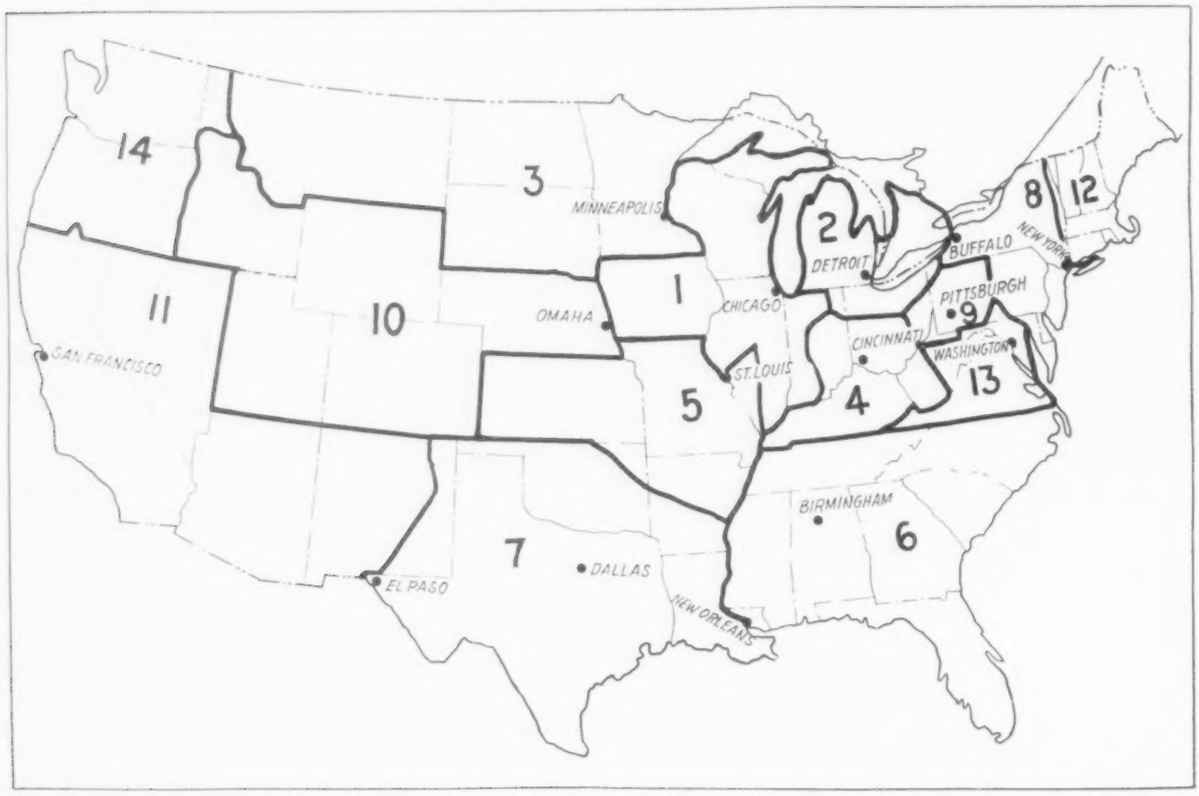

*How Population of the Country Was Divided in 1920*

*Capital Stock of Manufacturing Establishments in Three Territories in 1919*

est and similar investments because of faster transportation.

### Efficiency in Car Loading Still Lacking

Heavier and better loading is being urged more and more and is possible by reason of larger types of cars being built and greater tractive power of locomotives. Loading has not shown the improvement that had been hoped for, but is being dealt with by the American Railway Association through committees. The proper distribution and rapid movement of cars has reflected an efficiency that remains to be attained by loading. The car shortage bugaboo disappeared largely for this reason. As a striking evidence of the car shortage situation, the records give a colorful picture, even allowing for differences in business and industrial conditions. On Sept. 1, 1920, the car shortage was 147,309, as against only four, or virtually none, on Aug. 1, 1925. Car loadings in 1920 for the United States totaled 45,118,472, yet the loading for that period, most of which was a period of high pressure in business and industrial activities, was more than 3,000,000 cars fewer than in 1924, a less active year, when 48,527,227 cars were loaded.




*Jurisdiction of District Offices of Regional Advisory Boards Composed of Shippers and Receivers of Freight*

### Elimination of Economic Waste Promoted

Treating improved transportation from the standpoint of elimination of waste, Eugene S. Gregg, chief of the Transportation Division, Department of Commerce, said that the periodic car shortages of many years past have disappeared, although the tonnage loaded has increased more than 25 per cent since 1921. The waste imposed on carriers and public in those periods of shortages in transportation, he stated, was far larger than is commonly supposed. The derangement of production and employment in all industries, the widening of prices between producer and consumer, due to repeated strictures in transport which created glut in supply and scarcity in consumption, were estimated by Mr. Gregg at hundreds of millions annually.

"Some very important economic effects have resulted from full, prompt and reliable delivery of goods," said Mr. Gregg. "The necessity for carrying large stocks as a protection against transportation failure has largely disappeared, and in consequence the capital required in the nation's distribution has been considerably reduced."

While it was declared that one effect has been to burden the manufacturer with "short orders," nevertheless the change has been highly beneficial, for it was said to have greatly lessened the likelihood and danger of price fluctuations.

"A second improvement, aside from direct increase in facilities, has been the very great and fundamental increase in efficiency of operation," continued Mr. Gregg. "Since 1921 the average weekly car loadings has increased from 693,533 to 986,475, the number of miles per car per day from 22.4 to 26.9, the average trainload from 656 to 731 tons. The traffic is being carried with relatively less employees, the ton-miles handled per employee having been 221,203 in 1924, as against 182,477 in 1921. This fine accomplishment of the railroad managers has been distinctly aided by the large measures of cooperation with shippers established by the railroads through effective regional committees.

"There have been many other savings in transportation during the past few years in addition to those accomplished in the operation of the carriers. Better packing has been an important factor in the 48 per cent decrease in railroad claims between 1921 and 1924, a decrease of approximately from $92,000,000 to $48,000,000. Standardization of the forms used in associated industries of transportation has also had its effect in reducing the distribution costs. Special studies have been made by the department during the past year in the handling of certain classes of freight. The working out of the suggestions arrived at by these special studies has been a contributing factor to the lessening of terminal delay in loading and unloading freight, and to the more rapid movement of carload and less-than-carload merchandise."

Mr. Gregg said that there are many problems yet to be solved in transportation, notably the coordination of railroad and water facilities and the working out of the economic relation between motor-truck and less-than-carload railroad distribution.

### Car Mileage Per Day Increases

The betterment in traffic through improved equipment, heavier trainloads, and associated elements is reflected by the record. On Jan. 1, 1923, there were 2,310,604 freight cars owned by the railroads, while on April 1, 1925, the number had increased only to

2,350,697, while for the respective dates there were 64,566 and 64,747 locomotives owned. These figures show that retirements of cars and locomotives have almost equaled the number installed since Jan. 1, 1923. But car capacity and engine tractive power have increased. On April 1, 1923, the average carrying capacity of freight cars was 43.1 tons, while on April 1, 1925, it had increased to 44.5 tons. For the same periods the tractive power of locomotives increased from 37,441 lb. to 40,048 lb. The average tons per car, however, actually have shown a decline. For the year 1920 it was 29.3 tons, as against 27 for 1924, while in the early months of 1925 the figures ranged around 27 and 28 tons. Including surplus cars and cars awaiting repairs, the average miles per car per day in 1920 was 25.1, as against 26.9 in 1924, and the latter figure was practically applicable during the early months of 1925, later records not being available. Loading of coke showed an increase from 34.4 tons in 1922 to 34.7 tons per car in 1924; iron ore loading increased from 51.7 to 53.5 tons; rails and fastenings declined from 41.2 to 40.9 tons; sheet steel, bars and pipe dropped from 32.4 to 31.4 tons; pig iron, blooms and scrap increased from 35.6 to 36 tons, and castings, machinery and boilers made a slight gain, going from 19.6 to 19.7 tons.

#### Economic Survey Facilitates Car Distribution

As a means of arriving at an accurate plan of distribution of cars for industry and agriculture, the Car Service Commission made a survey showing the density of traffic of all kinds, its requirements in the way of transportation, both as to the actual number of cars, including types, and the seasonal and changing character of the movements. This survey was charted. It shows that in the Western territory, with a population of 16 people per sq. mile, there is produced 77.1 per cent of the grain, 51.2 per cent of the citrus fruits, 51.1 per cent of the fresh fruits, 60.5 per cent of the products of agriculture, 79 per cent of the live stock, 53.9 per cent of the lumber, 52 per cent of the products of forests, 55.9 per cent of the refined petroleum and 89.4 per cent of the iron ore, but only 28.8 per cent of manufacturing and miscellaneous, against 58.1 per cent in the Eastern district. The Eastern district had 72.6 per cent, against 19.3 per cent in the Western district, of the 1919 manufacturing capitalization.

It is obvious from the figures, as pointed out by Chairman M. J. Gormley of the Car Service Commission, that a considerable proportion of the products of agriculture in the West and South must be consumed in the densely populated territory of the East. This also indicated that the great problem in the matter of car distribution is to secure a return from this densely populated Eastern territory to the Southern and Western districts of cars arriving with products of the West and South, for the reason that the westbound and southbound traffic from the Eastern territory is not of sufficient volume to return loaded to the West and South all of the cars that are required for the movement of traffic from the large agricultural producing sections.

The cooperation between the shippers and the railroads, together with operations under the car service rules of the commission, has brought about this expediting of traffic, its proper distribution, and a change in marketing methods in all lines, including iron and steel and related industries. There has developed a decided transition in the way of greater efficiency in commerce and transportation. This situation manifestly has vitally affected not alone commerce and transportation, but the public at large as well.

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# COPPER IN 1925

## Output More Than in 1924—New Record in Imports—Stocks Decline

The smelter production of copper from domestic ores in 1925, as determined by the Bureau of Mines from reports of the smelters showing actual production for 11 months and estimated production for December, was 1,693,000,000 lb., compared with 1,634,000,000 lb. in 1924. The 1925 production is the largest peace-time output, being approximately 4 per cent higher than that of 1924, which was heretofore the highest recorded with the exception of the war years, 1916, 1917 and 1918. The estimated smelter production from domestic ores for December, as reported by the smelters, was 137,000,000 lb., somewhat lower than the average monthly rate for the year, or at the rate of 1,644,000,000 lb. a year. The estimated production for December, 1924, was exactly the same as that for December, 1925. The production in December, 1924, however, was at a higher rate than during the preceding months.

The production of new refined copper from domestic sources, determined similarly, was about 1,746,000,000 lb., compared with 1,674,000,000 lb. in 1924. In 1925 the production of new refined copper from domestic and foreign sources amounted to about 2,237,000,000 lb., compared with 2,260,000,000 lb. in 1924, a decrease of 23,000,000 lb. The production of secondary copper by primary refineries, however, increased from 155,000,000 lb. to about 184,000,000 lb. in 1925, or 29,000,000 lb., so that the total primary and secondary output of copper by the refineries was 6,000,000 lb. higher in 1925, being about 2,421,000,000 lb. compared with 2,415,000,000 lb. in 1924.

#### Imports, Exports and Stocks

The imports of unmanufactured copper during the first 11 months of 1925, according to the Bureau of Foreign and Domestic Commerce, amounted to 594,489,150 lb., a monthly rate of 54,000,000 lb., compared with 768,813,731 lb. for the entire year 1924, a monthly rate of 64,000,000 lb. The imports in 1924 were the highest recorded.

The exports of copper during the first 11 months of 1925 amounted to 1,009,181,363 lb., compared with 1,116,915,484 lb. exported during the entire year 1924. The exports of 1917 are the highest ever recorded, those of 1924 are next, and those of 1925 will rank third.

The stocks of refined copper at the end of 1925 were less than half those reported at the end of 1924, decreasing from 243,000,000 lb. at United States refineries at the end of 1924 to estimated stocks of about 112,000,000 lb. at the end of 1925. Stocks of refined copper on Nov. 30, 1925, were estimated at 119,000,000 lb. Stocks of blister copper at the smelters, in transit to refineries and at refineries, and materials in process of refining, were estimated to be about 398,600,000 lb. at the end of 1925, compared with 393,000,000 lb. on Dec. 31, 1924. The smelters and refineries estimated that about 417,000,000 lb. was on hand Nov. 30, 1925.

The quantity of refined copper withdrawn on domestic account during the year was about 1,485,000,000 lb., compared with 1,355,000,000 lb. in 1924, an increase of 130,000,000 lb.

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## More Copper Used in Refrigeration

About 30,000,000 lb. of copper will be used in 1926 in the manufacture of iceless refrigeration units, according to a survey just completed by the Copper and Brass Research Association, 25 Broadway, New York. The report states that expanded development of the industry which produces apparatus for this type of refrigeration has been very rapid in the past year through the linking up of effort between the manufacturers and the electric power companies. Iceless refrigeration is being popularized for household use as well as finding larger uses in industrial plants. Motor windings and parts, switches, wiring, compressor parts, tubing and tanks, etc., are all of copper. In ice cream boxes large amounts of sheet copper are used for tanks and tank covers.

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Shipments of tin accounted for approximately 75 per cent of the value of Bolivia's exports in 1925, according to reports received by the Department of Commerce. Bolivia is credited with furnishing 28 per cent of the total annual tin output of the world.

# Freight Rates Per 100 Lb. on Steel Pipe

*SUPPLEMENTING the freight rates published in* THE IRON AGE *of Jan. 7, the following comparative table of rates on steel pipe is presented. As pointed out in the article entitled "The Aftermath of Pittsburgh Plus," in last week's issue, the billing of pipe from the basing point having the lowest delivered prices leaves a comparatively small section of the country in which the Chicago base rules. Lower freight rates from Chicago district mills are frequently more than counterbalanced by the $4 per ton lower base prices at Lorain and Pittsburgh.*

| Destination | Producing Points: Pittsburgh | Lorain | Chicago |
|---|---|---|---|
| **Alabama—** | | | |
| Alabama City | $0.62 | $0.61 | $0.57 |
| Birmingham | 0.58 | 0.57 | 0.53 |
| Mobile | 0.67 | 0.65 | 0.57 |
| Tuscaloosa | 0.61 | 0.60 | 0.53 |
| **Arizona—** | | | |
| Bisbee | 1.15 | 1.15 | 1.00 |
| Humboldt | 1.15 | 1.15 | 1.00 |
| Phoenix | 1.15 | 1.15 | 1.00 |
| Prescott | 1.15 | 1.15 | 1.00 |
| **Arkansas—** | | | |
| Arkansas City | 0.79 | 0.74 | 0.57 |
| Fort Smith | 0.79 | 0.74 | 0.57 |
| Little Rock | 0.75 | 0.70 | 0.53 |
| Smackover | 0.82 | 0.77 | 0.60 |
| **California—** | | | |
| Bakersfield | 1.15 | 1.15 | 1.00 |
| Coalinga | 1.335 | 1.335 | 1.185 |
| Los Angeles, all rail | 1.15 | 1.15 | 1.00 |
| Los Angeles, rail and water | 0.70 | ... | 0.76 |
| San Francisco, all rail | 1.15 | 1.15 | 1.00 |
| San Francisco, rail and water | 0.66 | ... | 0.70 |
| **Colorado—** | | | |
| Colorado Springs | 1.05 | 1.00 | 0.82 |
| Denver | 1.05 | 1.00 | 0.82 |
| Pueblo | 1.05 | 1.00 | 0.82 |
| **Delaware—** | | | |
| Dover | 0.34 | 0.405 | 0.565 |
| Wilmington | 0.32 | 0.38 | 0.545 |
| **District of Columbia—** | | | |
| Common points | 0.31 | 0.37 | 0.535 |
| **Florida—** | | | |
| Jacksonville, all rail | 0.70 | 0.70 | 0.71 |
| Jacksonville, rail and water | 0.415 | ... | ... |
| Miami | 1.00 | 1.00 | 1.01 |
| Tampa, all rail | 0.955 | 0.87 | 0.88 |
| Tampa, rail and water | 0.61 | ... | ... |
| **Georgia—** | | | |
| Atlanta | 0.58 | 0.57 | 0.56 |
| Augusta | 0.61 | 0.62 | 0.65 |
| Macon | 0.62 | 0.61 | 0.62 |
| Savannah, all rail | 0.66 | 0.68 | 0.71 |
| Savannah, rail and water | 0.415 | 0.45 | ... |
| **Idaho—** | | | |
| Common points | 1.15 | 1.15 | 1.00 |
| **Illinois—** | | | |
| Chicago | 0.34 | 0.29 | 0.05 |
| Peoria | 0.385 | 0.33 | 0.155 |
| Moline | 0.43 | 0.355 | 0.175 |
| Springfield | 0.41 | 0.33 | 0.175 |
| **Indiana—** | | | |
| Anderson | 0.305 | 0.26 | 0.24 |
| Evansville | 0.36 | 0.34 | 0.28 |
| Indianapolis | 0.31 | 0.275 | 0.25 |
| Hammond | 0.34 | 0.29 | 0.03 |
| Muncie | 0.30 | 0.255 | 0.25 |
| Terre Haute | 0.34 | 0.30 | 0.24 |
| Fort Wayne | 0.29 | 0.235 | 0.22 |
| South Bend | 0.32 | 0.265 | 0.17 |
| **Iowa—** | | | |
| Davenport | 0.43 | 0.355 | 0.175 |
| Des Moines | 0.585 | 0.51 | 0.295 |
| Sioux City | 0.69 | 0.63 | 0.35 |
| Waterloo | 0.53 | 0.455 | 0.275 |
| **Kansas—** | | | |
| Hutchinson | 0.885 | 0.84 | 0.585 |
| Leavenworth | 0.69 | 0.63 | 0.35 |
| Topeka | 0.775 | 0.715 | 0.435 |
| Wichita | 0.885 | 0.84 | 0.585 |
| **Kentucky—** | | | |
| Bowling Green | 0.49 | 0.48 | 0.42 |
| Louisville | 0.33 | 0.38 | 0.30 |
| Ashland | 0.28 | 0.275 | 0.32 |
| **Louisiana—** | | | |
| Caddo | 0.84 | 0.79 | 0.63 |
| Monroe | 0.79 | 0.76 | 0.62 |
| Nachez | 0.88 | 0.83 | 0.67 |
| New Orleans | 0.67 | 0.65 | 0.37 |
| **Maryland—** | | | |
| Baltimore | 0.31 | 0.37 | 0.535 |
| Cumberland | 0.15 | 0.27 | 0.45 |
| **Michigan—** | | | |
| Detroit | 0.29 | 0.215 | 0.275 |
| Flint | 0.31 | 0.255 | 0.285 |
| Grand Rapids | 0.33 | 0.28 | 0.255 |
| Jackson | 0.29 | 0.22 | 0.255 |
| Kalamazoo | 0.31 | 0.265 | 0.22 |
| Saginaw | 0.325 | 0.27 | 0.295 |
| **Minnesota—** | | | |
| Duluth | 0.60 | 0.56 | 0.305 |
| St. Paul | 0.60 | 0.56 | 0.275 |
| Minneapolis | 0.60 | 0.56 | 0.275 |
| **Mississippi—** | | | |
| Jackson | 0.64 | 0.61 | 0.53 |
| Meridian | 0.62 | 0.61 | 0.53 |
| Vicksburg | 0.64 | 0.61 | 0.53 |
| **Missouri—** | | | |
| Kansas City | 0.69 | 0.63 | 0.35 |
| Jefferson City | 0.67 | 0.595 | 0.33 |
| St. Louis, all rail | 0.43 | 0.355 | 0.175 |
| St. Louis, rail and river via Louisville | 0.35 | ... | ... |
| **Montana—** | | | |
| Common points | $1.15 | $1.15 | $0.975 to $1.00 |
| **Nebraska—** | | | |
| Omaha | 0.69 | 0.63 | 0.35 |
| Lincoln | 0.74 | 0.68 | 0.40 |
| Grand Island | 0.955 | 0.895 | 0.615 |
| **New England—** | | | |
| Common points | 0.365 | 0.43 | 0.595 |
| **Nevada—** | | | |
| Carson City | 1.325 | 1.325 | 1.175 |
| Reno | 1.15 | 1.15 | 1.00 |
| Tonopah | 2.23 | 2.23 | 2.08 |
| Virginia City | 1.365 | 1.365 | 1.215 |
| **New York—** | | | |
| New York | 0.34 | 0.40 | 0.565 |
| Buffalo | 0.265 | 0.43 | 0.595 |
| Syracuse | 0.285 | 0.295 | 0.45 |
| **New Jersey—** | | | |
| Atlantic City | 0.39 | 0.45 | 0.615 |
| Camden | 0.32 | 0.38 | 0.545 |
| Newark | 0.34 | 0.40 | 0.565 |
| **New Mexico—** | | | |
| Albuquerque | 1.05 | 1.00 | 0.84 |
| Preston | 1.265 | 1.265 | 1.115 |
| **North Carolina—** | | | |
| Anderson | 0.45 | 0.65 | 0.78 |
| Asheville | 0.57 | 0.56 | 0.56 |
| Raleigh | 0.48 | 0.51 | 0.59 |
| Winston-Salem | 0.48 | 0.51 | 0.59 |
| **North Dakota—** | | | |
| Abercrombie | 0.875 | 0.825 | 0.535 |
| Bismarck | 1.135 | 1.095 | 0.81 |
| Grand Forks | 0.98 | 0.94 | 0.675 |
| Fargo | ... | ... | 0.535 |
| **Ohio—** | | | |
| Akron | 0.19 | 0.09 | 0.30 |
| Canton | 0.175 | 0.095 | 0.31 |
| Cleveland | 0.19 | 0.07 | 0.30 |
| Cincinnati | 0.29 | 0.265 | 0.28 |
| Dayton | 0.275 | 0.24 | 0.275 |
| Columbus | 0.255 | 0.21 | 0.29 |
| Mansfield | 0.24 | 0.11 | 0.285 |
| Portsmouth | 0.28 | 0.275 | 0.32 |
| Toledo | 0.27 | 0.18 | 0.265 |
| Youngstown | 0.11 | 0.095 | 0.32 |
| Massillon | 0.175 | 0.095 | 0.305 |
| Zanesville | 0.23 | 0.22 | 0.31 |
| **Oklahoma—** | | | |
| Guthrie | 0.885 | 0.84 | 0.645 |
| Muskogee | 0.84 | 0.79 | 0.60 |
| Oklahoma City | 0.885 | 0.84 | 0.645 |
| Tulsa | 0.84 | 0.79 | 0.60 |
| **Oregon—** | | | |
| Portland | 1.15 | 1.15 | 1.00 |
| **Pennsylvania—** | | | |
| Bethlehem | 0.32 | 0.38 | 0.545 |
| Johnstown | 0.11 | 2.05 | 0.355 |
| Philadelphia | 0.32 | 0.38 | 0.545 |
| Pittsburgh | ... | 0.19 | 0.34 |
| **South Carolina—** | | | |
| Charleston | 0.58 | 0.62 | 0.70 |
| **South Dakota—** | | | |
| Aberdeen | 0.89 | 0.82 | 0.55 |
| Pierre | 0.915 | 0.865 | 0.575 |
| Wilmot | 0.89 | 0.84 | 0.55 |
| Yankton | 0.775 | 0.725 | 0.435 |
| **Tennessee—** | | | |
| Chattanooga | 0.50 | 0.50 | 0.49 |
| Memphis, all rail | 0.56 | 0.53 | 0.42 |
| Memphis, rail and river via Louisville | 0.407 | ... | ... |
| **Texas—** | | | |
| Austin | 0.89 | 0.84 | 0.69 |
| Beaumont | 0.705 | 0.655 | 0.49 |
| Dallas | 0.89 | 0.84 | 0.69 |
| Forth Worth | 0.89 | 0.84 | 0.69 |
| Houston | 0.705 | 0.655 | 0.49 |
| San Antonio | 0.89 | 0.84 | 0.69 |
| Waco | 0.89 | 0.84 | 0.69 |
| Wichita Falls | 0.89 | 0.84 | 0.69 |
| **Utah—** | | | |
| Common points | 1.15 | 1.15 | 0.95 to 1.00 |
| **Virginia—** | | | |
| Norfolk | 0.38 | 0.405 | 0.535 |
| Newport News | 0.38 | 0.405 | 0.535 |
| **Washington—** | | | |
| Seattle | 1.15 | 1.15 | 1.00 |
| Spokane | 1.15 | 1.15 | 1.00 |
| **West Virginia—** | | | |
| Charleston | 0.285 | 0.285 | 0.34 |
| Morgantown | 0.19 | 0.25 | 0.355 |
| Wheeling | 0.11 | 0.19 | 0.34 |
| **Wisconsin—** | | | |
| Milwaukee | 0.37 | 0.32 | 0.08 |
| Madison | 0.455 | 0.405 | 0.115 |
| Green Bay | 0.435 | 0.375 | 0.205 |
| Manitowoc | 0.405 | 0.345 | 0.205 |
| **Wyoming—** | | | |
| Casper | 1.15 | 1.125 | 0.835 |
| Rawlins | 1.15 | 1.125 | 0.835 |
| Cheyenne | 1.05 | 1.00 | 0.82 |

# Freight Rates on Sheets and Tin Plate from Gary

(Per 100 Lb.)

IN THE IRON AGE of Jan. 7, page 35, were published freight rates on sheets and tin plate from Pittsburgh. The appended table shows rates from Gary, Ind., Western basing point for the same commodities.

| Gary, Ind., to | Sheets | Tin Plate |
|---|---|---|
| **Alabama—** | | |
| Birmingham | $0.53 | $0.53 |
| Mobile | 0.57 | 0.57 |
| **Arizona—** | | |
| Phoenix | 1.00 | 0.75 |
| **Arkansas—** | | |
| Fort Smith | 0.545 | 0.75 |
| Little Rock | 0.51 | 0.75 |
| Smackover | 0.58 | 0.75 |
| **California—** | | |
| Emeryville | 1.00 | 0.75 |
| Los Angeles | 1.00 | 0.75 |
| San Francisco | 1.00 | 0.75 |
| **Colorado—** | | |
| Colorado Springs | 0.83 | 0.75 |
| Denver | 0.83 | 0.72 |
| Pueblo | 0.95 | 0.75 |
| **Delaware—** | | |
| Wilmington | 0.545 | 0.545 |
| **District of Columbia—** | | |
| Common points | 0.535 | 0.535 |
| **Florida—** | | |
| Jacksonville, all rail | 0.71 | 0.71 |
| Tampa | 0.88 | 1.095 |
| **Georgia—** | | |
| Atlanta | 0.58 | 0.58 |
| Savannah | 0.71 | 0.71 |
| **Idaho—** | | |
| Common points | 1.00 | 0.75 |
| **Illinois—** | | |
| Bloomington | 0.13 | 0.13 |
| Cairo | 0.235 | 0.235 |
| Moline | 0.155 | 0.155 |
| Peoria | 0.13 | 0.13 |
| Rock Island | 0.155 | 0.155 |
| **Indiana—** | | |
| Anderson | 0.24 | 0.24 |
| Evansville | 0.235 | 0.281 |
| Fort Wayne | 0.22 | 0.22 |
| Indianapolis | 0.155 | 0.25 |
| Kokomo | 0.215 | 0.215 |
| Muncie | 0.25 | 0.25 |
| South Bend | 0.12 | 0.17 |
| Terre Haute | 0.155 | 0.24 |
| **Iowa—** | | |
| Burlington | 0.155 | 0.155 |
| Cedar Rapids | 0.245 | 0.275 |
| Council Bluffs | 0.415 | 0.415 |
| Davenport | 0.155 | 0.155 |
| Des Moines | 0.295 | 0.325 |
| Fort Dodge | 0.31 | 0.35 |
| Mason City | 0.275 | 0.305 |
| Ottumwa | 0.275 | 0.305 |
| Sioux City | 0.415 | 0.415 |
| Waterloo | 0.275 | 0.305 |
| **Kansas—** | | |
| Atchison | 0.415 | 0.415 |
| Hutchinson | 0.765 | 0.72 |
| Independence | 0.60 | 0.60 |
| Leavenworth | 0.415 | 0.415 |
| Topeka | 0.51 | 0.51 |
| Wichita | 0.765 | 0.72 |
| **Kentucky—** | | |
| Ashland | 0.32 | 0.32 |
| Bowling Green | 0.42 | 0.42 |
| Louisville | 0.30 | 0.30 |
| Newport | 0.28 | 0.28 |
| Paducah | 0.34 | 0.34 |
| **Louisiana—** | | |
| New Orleans | 0.57 | 0.57 |
| Shreveport | 0.60 | 0.72 |
| **Maryland—** | | |
| Baltimore | 0.535 | 0.535 |
| Cumberland | 0.45 | 0.45 |
| **Michigan—** | | |
| Detroit | 0.275 | 0.275 |
| Flint | 0.285 | 0.285 |
| Grand Rapids | 0.26 | 0.26 |
| Jackson | 0.255 | 0.255 |
| Kalamazoo | 0.22 | 0.22 |
| **Minnesota—** | | |
| Duluth | 0.305 | 0.305 |
| Minneapolis | 0.275 | 0.275 |
| St. Paul | 0.275 | 0.275 |
| **Mississippi—** | | |
| Gulfport | 0.57 | 0.57 |
| Jackson | 0.53 | 0.53 |
| Meridian | 0.53 | 0.53 |
| Vicksburg | 0.53 | 0.53 |
| **Missouri—** | | |
| Jefferson City | 0.365 | 0.365 |
| Kansas City | 0.42 | 0.42 |
| St. Louis | 0.175 | 0.175 |
| **Montana—** | | |
| Common points | 1.00 | 0.75 |
| **Nebraska—** | | |
| Grand Island | $0.66 | $0.66 |
| Hastings | 0.66 | 0.66 |
| Lincoln | 0.465 | 0.465 |
| Omaha | 0.42 | 0.42 |
| **Nevada—** | | |
| Common points | 1.00 | 0.75 |
| **New England—** | | |
| Common points | 0.595 | 0.595 |
| **New Jersey—** | | |
| Camden | 0.545 | 0.545 |
| Jersey City | 0.565 | 0.565 |
| **New Mexico—** | | |
| Albuquerque | 0.98 | 0.75 |
| Santa Fe | 0.98 | 0.75 |
| **New York—** | | |
| Buffalo | 0.34 | 0.34 |
| Syracuse | 0.45 | 0.45 |
| New York | 0.565 | 0.565 |
| **North Carolina—** | | |
| Asheville | 0.56 | 0.56 |
| Charlotte | 0.62 | 0.62 |
| Durham | 0.59 | 0.59 |
| Raleigh | 0.59 | 0.59 |
| Winston-Salem | 0.59 | 0.59 |
| **North Dakota—** | | |
| Bismarck | 0.90 | 0.75 |
| Fargo | 0.57 | 0.59 |
| Grand Forks | 0.675 | 0.675 |
| **Ohio—** | | |
| Akron | 0.30 | 0.30 |
| Canton | 0.31 | 0.31 |
| Cincinnati | 0.28 | 0.28 |
| Cleveland | 0.30 | 0.30 |
| Columbus | 0.29 | 0.29 |
| Dayton | 0.275 | 0.275 |
| Portsmouth | 0.31 | 0.31 |
| Springfield | 0.34 | 0.34 |
| Toledo | 0.265 | 0.265 |
| Youngstown | 0.32 | 0.32 |
| Zanesville | 0.31 | 0.31 |
| **Oklahoma—** | | |
| Enid | 0.805 | 0.75 |
| Muskogee | 0.69 | 0.75 |
| Oklahoma City | 0.805 | 0.75 |
| Tulsa | 0.69 | 0.75 |
| **Oregon—** | | |
| Common points | 1.00 | 0.75 |
| **Pennsylvania—** | | |
| Bethlehem | 0.545 | 0.545 |
| Erie | 0.34 | 0.34 |
| Johnstown | 0.355 | 0.355 |
| Pittsburgh | 0.34 | 0.34 |
| Philadelphia | 0.545 | 0.545 |
| **South Carolina—** | | |
| Charleston | 0.70 | 0.70 |
| Greenville | 0.62 | 0.62 |
| **South Dakota—** | | |
| Aberdeen | 0.57 | 0.59 |
| Brookings | 0.455 | 0.455 |
| Pierre | 0.76 | 0.76 |
| Sioux Falls | 0.43 | 0.43 |
| Yankton | 0.475 | 0.475 |
| **Tennessee—** | | |
| Chattanooga | 0.49 | 0.49 |
| Memphis | 0.42 | 0.42 |
| **Texas—** | | |
| Austin | 0.84 | 0.75 |
| Beaumont | 0.68 | 0.75 |
| Dallas | 0.84 | 0.75 |
| El Paso | 0.98 | 0.75 |
| Fort Worth | 0.84 | 0.75 |
| Galveston | 0.68 | 0.75 |
| Houston | 0.68 | 0.75 |
| San Antonio | 0.84 | 0.75 |
| **Utah—** | | |
| Common points | 0.95 | 0.75 |
| **Virginia—** | | |
| Newport News | 0.535 | 0.535 |
| Norfolk | 0.535 | 0.535 |
| Richmond | 0.535 | 0.535 |
| **Washington—** | | |
| All points | 1.00 | 0.75 |
| **West Virginia—** | | |
| Morgantown | 0.355 | 0.355 |
| Wheeling | 0.34 | 0.34 |
| **Wisconsin—** | | |
| Beloit | 0.095 | 0.095 |
| Eau Claire | 0.275 | 0.275 |
| Fond du Lac | 0.205 | 0.21 |
| Green Bay | 0.205 | 0.205 |
| La Crosse | 0.245 | 0.245 |
| Madison | 0.095 | 0.095 |
| Manitowoc | 0.205 | 0.205 |
| Milwaukee | 0.08 | 0.08 |
| **Wyoming—** | | |
| Casper | 1.00 | 0.75 |
| Cheyenne | 0.83 | 0.72 |
| Rawlins | 0.95 | 0.75 |

# Year of Fair Profits Expected If Production Is Held Within Bounds

## Price Structure in Iron and Steel Industry More Nearly Normal Than in Many Months

BY DR. LEWIS H. HANEY
DIRECTOR NEW YORK UNIVERSITY BUREAU OF BUSINESS RESEARCH

THE general condition of the iron and steel industry at the beginning of 1926 gives the analyst the impression of being quite comfortable. It shows a considerable degree of normality. On the one hand, the outlook for spring business is good. The railroads are decidedly prosperous and, while the condition of their equipment is such as to make unusually large purchases improbable, their prosperity and large volume of traffic furnish strong evidence that railroad buying will be satisfactory. All indications are that both the building and automobile industries will have large steel requirements this spring.

On the other hand, production of iron and steel in comparison with the prospective demand is not excessive and is at present well balanced between pig iron and steel ingots. The price structure in the industry is more nearly normal than it has been in a good many months.

If production is only held within bounds, a very sound condition will continue.

As we figure the long-time trend of steel requirements, the ingot output in December was practically the same as it was last January. In other words, the December output was just about as much above the so-called normal trend of steel ingot production at the end of the year as at the beginning. On this basis, the production of December has not been exceeded to any considerable extent during recent years except in the May-August period of 1923. Of course, judgments as to normal requirements must differ, but in any case it is clear that the steel output is well above normal.

This fact suggests caution in expanding production. In most respects the situation in the iron and steel industry at the beginning of the new year is fairly normal and the outlook for prosperity in the industry is truly good. If only reasonable restraint is exercised by producers, stable markets and fair profits may be prolonged throughout the year.

While steel production is above the line of normal trend, the present volume is probably justified by the high level of activity in steel consuming industries, which is materially greater at the end of the year than it was at the beginning, and it follows that what proved to be over-production in January is a fair volume of output in December.

### Unfilled Orders Still Low

TOO much, however, should not be made of the upward trend of unfilled orders. It is true that the orders on the books of the Steel Corporation have steadily increased for four months, but they are still smaller than they were at the beginning of the year. Moreover, the December increase in unfilled orders *was partly seasonal* and even without adjustment represents a smaller percentage of gain than that which occurred in November, the percentages being, respectively, 9.8 per cent against 11.5 per cent. The production of steel ingots as shown in Fig. 1 is as far above the unfilled orders curve as it was in January, 1924—when a renewed decline in the industry was in the making.

The average price of finished steel, as shown by THE IRON AGE composite, has been unchanged for over five weeks at 2.453 cents. The December average of 2.45 cents compares with 2.433 cents in the preceding month. Thus steel prices on the average may be called fairly firm. Our barometers indicate that they are likely to work a little higher, which seems the more probable as some items are below their normal relation to others. But no large or long continued advance in finished steel prices now seems likely and this is certainly true if production keeps on growing at the December rate.

At present the most probable development seems to be a considerable period of steady prices and, taking

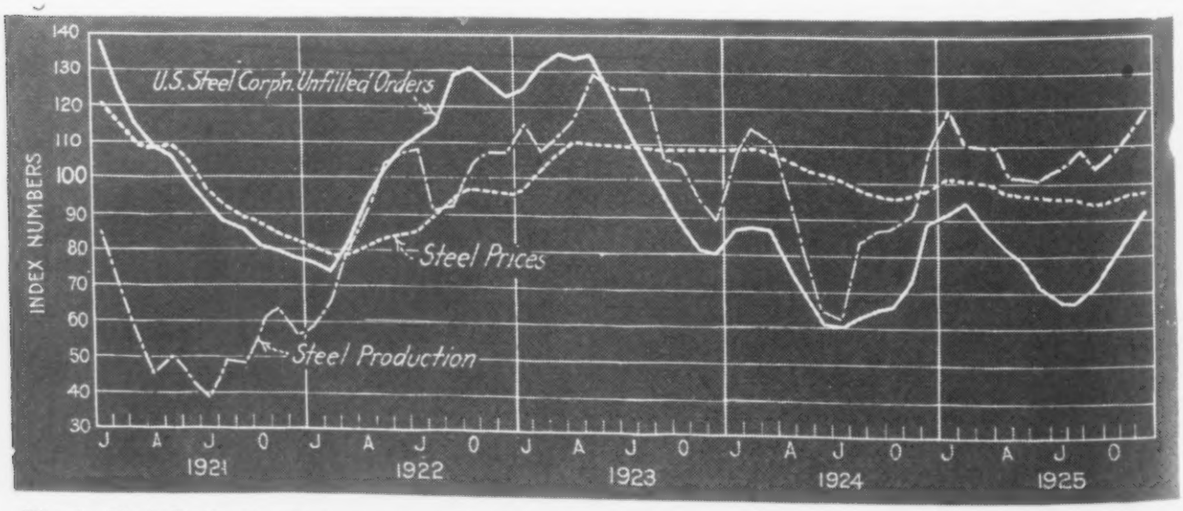


*Fig. 1—Steel Production Is Now About 20 Per Cent Above the Estimated Normal, but Current Consumption Is Also Very Large*

# In This Issue

*If pig iron output continues to increase at present rate, prices may weaken.*—Economist sees year of good profits ahead for iron and steel industry, providing overproduction is avoided.—Page 152.

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*Daily rate of steel ingot production drops in December.*—Declines 2.1 per cent compared with November rate; total output for December was 3,975,824 tons, 1.75 per cent above November.—Page 160.

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*Corporation's unfilled orders pass 5,000,000-ton mark.*—Increase 472,597 tons in December, now 5,033,364 tons, well above last year's total at this time.—Page 160.

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*Two important companies celebrate centenary.*—Alan Wood Iron & Steel Co., Philadelphia, and Heald Machine Co., Worcester, Mass., both founded in 1826.—Pages 143, 160.

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*"The average union wage rate in the United States today will buy 37.1 per cent more of living on the 1913 standard than it would in 1913.*—Purchasing power of iron and steel mill wages has increased nearly 35 per cent since that time.—Page 138.

---

*More pre-treating of ores for blast furnaces predicted.*—Performance results from charges of 100 per cent sinter show 60 per cent increase in furnace output and 25 per cent reduction in coke cost.—Page 130.

---

*Better ore prices anticipated because of depletion of high-cost stocks.*—Dwight E. Woodbridge looks for output of close to 60,000,000 tons of ore this year. 63,819,000 tons shipped from mines in 1925, stocks dropped 13 per cent.—Pages 130, 133.

---

*Barometer of machine tool orders indicates peak business may be reached any month now.*—E. F. DuBrul suggests development of new designs now to prepare for employment of key men during slack period, which may be expected.—Page 134.

*Establishment of blast furnace at Everett, Mass., may be forerunner of other furnaces in New England.*—When Northern and Brazilian ores enter market more prominently, New England will have many advantages as iron making district.—Page 144.

---

*High industrial activity indicated by record consumption of electric current.*—October and November consumption 14 per cent above same months in previous year.—Page 144.

---

*Increased efficiency of railroads means saving in investments and interests, etc.*—Estimated as high as $400,000,000 a year; faster shipments have direct effect on iron and steel business.—Page 145.

---

*Use of welding in assembling steel stampings found economical and practical.*—Jigs facilitate operations and permit alinements to close limits; new seam welding machine designed for use on axle housings.—Page 123.

---

*New method of pouring ingots said to reduce pipes and blowholes.*—Stream from ladle is broken up by float and heat retained by reservoir serves as an inexpensive hot-top; many indirect savings claimed.—Page 128.

---

*Coke production of Connellsville region reaches 7,395,120 tons for 1925.*—Proportion of Connellsville coke to total output of pig iron now one to five; bee-hive ovens depend more on peak load of coke demand; by-product ovens regular requirements.—Page 157.

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*Do jobbers make more money by taking fabricating jobs than if they sold to regular fabricators?*—Both sides blamed in "direct-order" controversy.—Page 158.

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## Flat Mailing Wins Approval

FOR readers who keep the Annual Review number of THE IRON AGE in desk or bookcase the year round our circulation department has secured a number of black leather binders suitably stamped in gold. These will be forwarded for a nominal sum upon application to the circulation department of this publication.

The flat mailing which was put into effect two weeks ago has met with instant and generous approval. "The new mode is a vast improvement," says one subscriber. "Easier to open the book," "More readable when sent out flat," "Much more attractive to look at," "Easier to get into," and "way ahead of the old method" are a few of the dozens of comments. One reader's postman remarked that, "it was easier to handle."

Not the least of the advantages of the flat mailing is the fact that it makes vertical filing simpler and increases the useful life of each issue.

*For News Summary See Reverse Side*

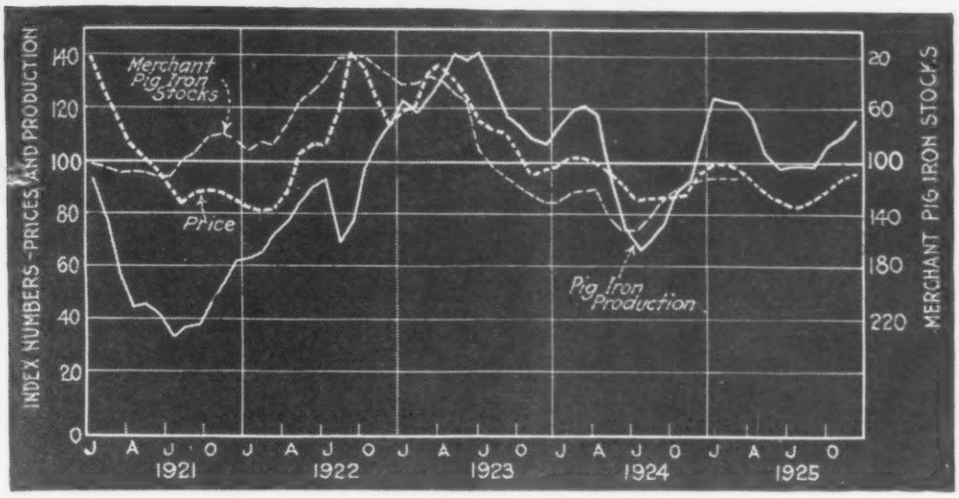


*Fig. 2—Despite a Fairly High Level of Pig Iron Production, Stocks Are Supposed to Be Low and Consumption Large and Overproduction Is Not Evident*

everything into consideration, this is a desirable condition.

### Pig Iron Prices May Weaken

THE price of pig iron has remained practically unchanged for over six weeks. As shown in Fig. 2, THE IRON AGE composite average in December ($21.54) was higher than in November ($21.17). These figures compare with $21.88 in December, 1923, and $21.45 a year later. During intermediate months the price has gradually risen and fallen, and it is thus apparent that pig iron has roughly averaged around $21 during the last two years.

Considering the growing volume of production, the recent stability shows considerable strength in the market. Our adjusted index of pig iron output registered a sharp gain in December and carried the pig iron curve well over the normal trend. Allowing for both the normal growth in the industry and the usual monthly variations, pig iron production is relatively higher than it was in January, 1924, and considerably above December last year. At both of these earlier periods a weakened market resulted in about two months and now the question naturally arises: Will the present volume of production cause a similar decline in prices?

In several respects the present situation, however, is such as to warrant the large output at this time. For one thing, stocks of pig iron are smaller. In the second place, the unfilled steel orders are higher and the production of steel ingots is greater in comparison with the production of pig iron. Again, the activity of iron and steel using industries is at a considerably higher level than at the earlier periods mentioned. Thus the conclusion seems reasonable that *the volume of pig iron production is at present not excessive.*

But, as in the case of steel, it is probable that if the pig iron output continues to increase at the recent rate for two or three months more, stocks will begin to accumulate and prices to weaken. It seems doubtful if pig iron will increase much further in price and we would not be surprised if a little weakness were to develop within a month or two.

### More Stable Price Standard

THE chart showing the trend of prices for certain representative items of iron and steel (Fig. 3) indicates that in December further readjustments occurred and that they were in the direction of *a more normal price structure for the industry.* On the basis of the December averages, the more important points revealed are as follows: (1) The average price of black sheets moved up and at $74.59 per ton was more nearly in line with a normal spread over billets (and steel bars) than in any month for a long time. (2) Spot foundry coke, which fell to $3.50 in one week, averaged $4.32 for the month, and judging by the past the spread seems fairly normal with iron averaging $21.54 and coke around $4.50. Most steel concerns are reported to be covered for the first quarter at $4. (3) Bars and billets continue to show a normal spread.

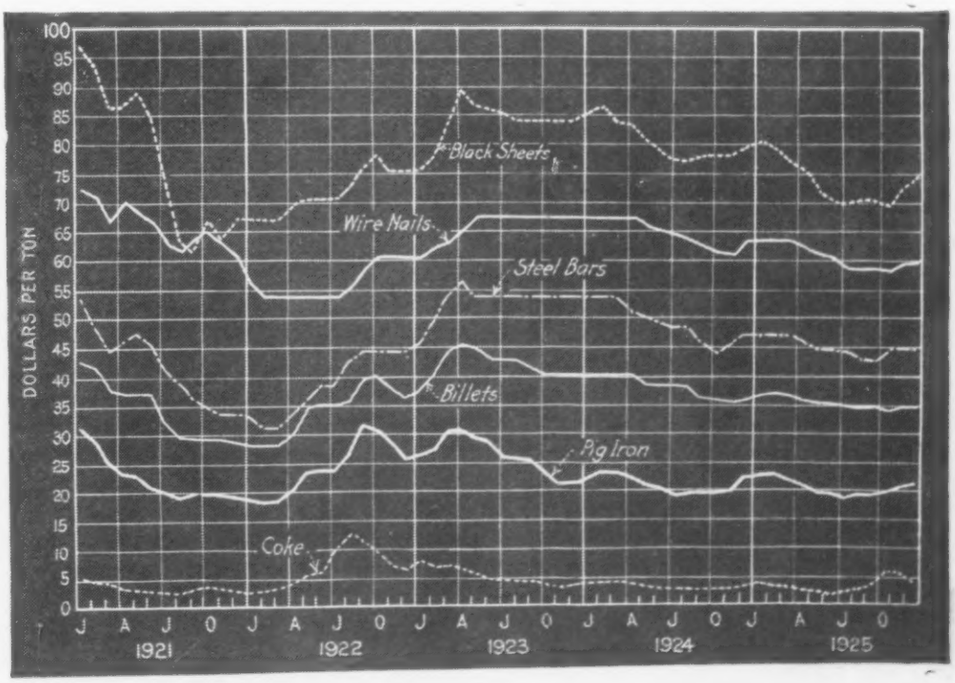


*Fig. 3—The Price Structure Is More Nearly Normal Than for Many Months, the Coke and Pig Iron Levels Alone Suggesting Some Readjustment*

ESTABLISHED 1855

# THE IRON AGE

A. I. FINDLEY, *Editor* W. W. MACON, *Managing Editor*

Member of the Audit Bureau of Circulations and of Associated Business Papers, Inc.

Published every Thursday by the IRON AGE PUBLISHING CO., 239 West 39th Street, New York
C. S. BAUR, *General Advertising Manager*

F. J. Frank, *President* George H. Griffiths, *Secretary*

Owned by the United Publishers Corporation, 239 West 39th Street, New York. Charles G. Phillips, *Pres.* A. C. Pearson, *Vice-Pres.* F. J. Frank, *Treas.* H. J. Redfield, *Secy.*

BRANCH OFFICES—Chicago: Otis Building. Pittsburgh: Park Building. Boston: 425 Park Square Building. Philadelphia: 1402 Widener Building. Cleveland: Guardian Building. Detroit: 7338 Woodward Ave. Cincinnati: First National Bank Bldg. Buffalo: 833 Ellicott Square. Washington: 536 Investment Building. San Francisco: 320 Market St. London, Eng.: 11 Haymarket S.W.1.

Subscription Price, United States and Possessions, Mexico, Cuba, $6.00; Canada, $8.50; Foreign, $12.00 per year. Single copy 25 cents.

Entered as second-class matter, June 18, 1879, at the Post Office at New York, N. Y., under the Act of March 3, 1879.
PRINTED IN U. S. A.

## The Unsporting Instinct

IT is the sporting instinct that leads men to take chances, and when things go against them to face the music without whimpering. Business men are generally good sportsmen. Before the war they used to take punishment with a smile and then try again. The mollycoddling that came into being during the war produced a great deal of what we may call the unsporting instinct, which lingers among us and even spreads. A loser possessed of that spirit bewails his fate and appeals to the Government to help him with a bonus, or price fixing, or something equally uneconomic at the expense of other and more successful people.

Thus we are bemoaning the high price for rubber and how the British are draining our money in payment for it. We forget that only a few years ago the Malayan rubber producers begged us to contract for rubber on our own terms. We thought we were too clever to be caught in that way. Then in our prosperity we bid up the price on ourselves, get Washington to say impotent and disagreeable things to the British, and some producers talk of beginning to grow rubber for themselves, which our own United States Rubber Co. started to do many years ago, with great profit now to itself.

The cotton growers have become notoriously imbued with the non-sporting instinct. If the cotton crop proves short and the price goes up things in their eyes are fine; but if the crop proves large and the price falls they want to abolish the statistics.

Now the corn-growers are grumbling over the consequences of their mismanagement of their business and are appealing to Congress to do something to help them at the expense of other taxpayers, which means substantially those of the New England and Middle States.

Persons engaged in the metal industries are capitalistic, i.e., are closely affiliated with Wall Street, or are supposed to be, and consequently are constrained to continue to be sportsmen. If they have any wish to be pampered and helped they will not get anywhere with it. The iron and steel makers have their hard time but they have to grin and bear it and sweat to improve their methods.

No industry was harder hit by the deflation following 1920 than copper producing. The shareholders of copper companies still smart from their wounds. Not for them was there ever any hope for manna from a bureaucratic régime that for some unknown reason was determined to harry them. The copper producers have had to be mighty good sportsmen to live their recent lives and keep smiling.

A result of mollycoddling was to make a lot of poor losers. If winning they'd be gay; if losing they'd cry lustily. What the farmers and many of the rest of them need is not a system of bureaucratically administered bonuses but is rather a guardian. What their legislators in Congress need is an impregnation with simple honesty and some courses in economics. What we all need is leadership that will see clearly, will reason intelligently and will tell the truth.

## Return to Normalcy

SEVEN years after the war we might be expected to have returned practically to "normalcy," and in the present state of mind the need of any reference to the subject may be questioned. A great deal has occurred in the past year, however, for just one year ago the Annual Review Number of THE IRON AGE carried an editorial headed "Working Back to Normal." It was there remarked that "just after the war the majority of men expected to be carried along by the post-war boom in industry that had been commonly predicted," while in 1921 "return to normalcy" had been preached. We are thinking of the matter much less today than a year ago.

From another viewpoint, an accomplishment of 1925 was a clearer perception of the fact that "normalcy" and "pre-war" are entirely different as to details. They agree only in that both represent adjustment to environment. Today we are taking things as we find them, not as we thought the war would leave them. We turn to account circumstances we find existing, which is quite different from the one-time aim to take advantage of war-

time conditions or, later, the desire to return to pre-war conditions.

That there was much harder work in 1925 than in any preceding year since the war is evidenced by the statistics of physical accomplishment, viewed in the light of employment of men and equipment. More dominant in industry today than at any time since the war is the note of economy—increasing output per man and cutting costs of marketing. Management has little thought of a "return to normalcy," indeed, of a return to any state of the past, so busy is it in plans for advancing to new ground. That is one good gage of the increase in efficiency.

## Domestic Ferromanganese in 1925

ACREDITABLE record was made by the American ferromanganese industry in 1925. The total of 252,600 tons, shown by THE IRON AGE blast furnace returns, was only 14 per cent less than the post-war record of 295,400 tons in 1920 and 24 per cent under the war peak of 333,000 tons in 1918. Despite fairly heavy imports last year, the proportion of domestic alloy was large. Disregarding exports, which are usually small, the 1925 consumption was approximately 341,600 tons, estimating the imports for the year at 89,000 tons. Thus the domestic product constituted nearly 74 per cent of the total used. In view of the active competition from abroad, particularly from electric ferromanganese, the 1925 showing is noteworthy as indicating that American makers are holding their own. Judging from some recent market developments the American-made product is likely to figure to even a greater extent in the home consumption of 1926.

## Connellsville Coke Still Counts

PRODUCTION of coke in the Connellsville and lower Connellsville region as reported by the *Connellsville Courier* is shown below for the past three years, production of pig iron in the United States being given for comparative purposes:

| | Connellsville Coke, Net Tons | All Pig Iron, Gross Tons |
|---|---|---|
| 1923..... | 13,114,340 | 40,361,146 |
| 1924..... | 6,668,560 | 31,405,790 |
| 1925..... | 7,395,120 | 36,700,000 |

Connellsville coke production in 1925 was above a normal relation to conditions in the iron trade, as there was quite a demand from the East in the last three or four months of the year, on account of the suspension of anthracite mining. Nevertheless the region's output was low relative to performances of the past.

The *Courier* has been reporting production annually for 46 years, and its figures make an interesting record of the rise of this blast furnace raw material to a position of remarkable preeminence, and then its decline on account of the rapidly increasing vogue of by-product coking. Just where the region now stands in relation to the iron industry cannot be computed, because statistics are lacking of the large amount of coking coal it ships to by-product ovens.

In Connellsville history there have been two distinctly marked high spots, one when the region's production was the highest, the other when its production relative to pig iron was the highest.

The high point in the proportion fell in 1895, when 8,244,438 net tons of Connellsville coke was produced while the country made 9,446,308 gross tons of pig iron. This represents 88 coke to 100 pig iron. The proportion was considerably lower in immediately preceding and following years. At quinquennial periods the ratio has been as follows:

*Net Tons of Connellsville Coke to Gross Tons of Pig Iron*

| | | | |
|---|---|---|---|
| 1880..... | 0.58 | 1905..... | 0.78 |
| 1885..... | 0.77 | 1910..... | 0.68 |
| 1890..... | 0.70 | 1915..... | 0.60 |
| 1895..... | 0.88 | 1920..... | 0.29 |
| 1900..... | 0.74 | 1925..... | 0.20 |

In the two years before the war the Connellsville region reached, in normal circumstances, its highest coke production—20,000,000 tons in 1912 and 20,100,000 tons in 1913. Only once, in 1916, under very high pressure, it made more coke, 21,654,502 tons.

It is incorrect to regard the general course as a decadence, for it is more of the nature of a depletion. A quarter century ago the authorities were indisposed to give the region as long a life as it has been showing, and in 1900 only a million tons of by-product coke was made. It was just at that time that the Masontown, "Klondike" or lower Connellsville, region was beginning to show its possibilities, and that development and some further extensions have given the region as a whole additional longevity.

It is a great convenience to the iron industry that the Connellsville coke industry remains. By-product ovens involve very heavy capital outlay, and for physical reasons ought to be operated continuously, whereas the coke requirements of the blast furnaces vary widely. The Connellsville beehive ovens take the peak of the load. This accounts for their making only half as much coke in 1924 as in 1923, whereas the production of pig iron decreased only 22 per cent.

## Hague Foreign Patent Convention

BY eliminating some of the features objectionable to the United States in the patent laws of foreign nations, the International Convention for the Protection of Industrial Property, held at The Hague in the autumn, seems to have removed much of the cause for introducing the compulsory working clause into the patent laws of the United States. This is the main conclusion of a bulletin just issued by Commissioner of Patents Thomas E. Robertson. The convention, signed by the delegates of 32 nations, practically eliminates the risk of forfeiture of a patent for non-working or for non-payment of taxes through accidental causes, and for forfeiture substitutes compulsory licenses to use unworked patents. Another very important provision of the revised convention relates to the cancellation of fraudulently registered trademarks, furnishing "an effective remedy against piracy of well known trademarks," from which American manufactures have suffered severely.

While in Commissioner Robertson's opinion the conference did not go so far in the matter of working patents and the taxes thereon as the

United States delegates desired, the adoption of the convention "represents a long step forward in the direction of doing away entirely with requirements of working in order to maintain a patent in force and very materially diminishes the risk of a patentee losing his rights as in former years."

The matter of foreign patents has not been fair to Americans, as Secretary Hoover set forth in a statement issued when the Patent Office was transferred from the Department of the Interior to the Department of Commerce:

> At the present time an American patentee is required in many foreign countries to manufacture continuously in that country under his patent or lose his patent rights. We make no such requirements in the United States. The consequence is that our inventors and manufacturers, in order to protect their inventions, have been driven to the establishment of a large number of factories abroad, whereas foreign patentees have been able to use their patents in the United States so as actually to prevent manufacture here.
>
> A list of many large manufactures established by American capital abroad in order to protect their patents could be enumerated, whereas there has been no establishment of manufacture in this country for this reason. In fact, a foreign patentee, by registering his patent in the United States, can hold it for 17 years and prevent manufacture of the article in the United States.

Mr. Hoover said in the same connection that "if the International Convention shall fail to secure primary justice for American patentees, we shall ask for a complete revision of the patent laws of the United States which will bring this about." Mr. Robertson's statement would indicate, however, that in view of the convention's action there is now no call for retaliatory measures.

A period of three years is established before the non-working penalty operates, and, which is very important, this period of exemption begins not with the date of application for a patent, but with the date of actual granting. As for taxes, the convention provides a period of at least three months grace for the payment of any taxes with reference to industrial property rights beyond the time fixed by law, and that, in respect to patents, this period must be at least six months, or a provision must be made for restoring patents which have been forfeited for non-payment of taxes. To quote Mr. Robertson's bulletin:

> With respect to trademarks, each country agrees to provide for the cancellation of a registration of a trademark well known in that country as being the trademark of the citizens of one of the other countries of the Union, and that the expiration of a registration in the home country shall not shorten the term for which registration of the mark had been granted in any of the other countries of the Union.
>
> With respect to unfair competition, in addition to the agreement of the old convention that each country would grant to the citizens of the other countries an effective remedy against unfair competition, it was agreed that any act contrary to honest usages in commercial matters would be regarded as an act of unfair competition, and especially any acts whatever which would be likely to create confusion with the products of a competitor, and false allegations of a nature to discredit the products of a competitor.

## CORRESPONDENCE

### The Iron and Steel Jobber and His "Job"

*To the Editor:* "He that is without sin among you, let him cast the first stone . . ."

Were it possible to bring together around a family conference table a few important steel jobbers and a few steel manufacturers, this challenge might tend to clarify the atmosphere just as it did 2000 years ago, when uttered by the greatest peacemaker the world will ever know.

That there is a murky atmosphere is confirmed by Mr. Larkin's admirable letter published in the Dec. 17 issue of THE IRON AGE. Mr. Larkin permits his reader to draw his own conclusions as to the fundamental causes of the alleged troubles, but does intimate that the warehouse business in which are invested millions of dollars is in danger of destruction.

He further intimates that the type of man engaged by the mills as sales representative has much to do with it.

The American Iron, Steel and Heavy Hardware Association, of which Mr. Larkin's company doubtless is a member, appointed a committee some time ago to report on the subject. It is alleged the report of this committee was quite militant, and charged practically all of their major ailments to the mills which sell direct to customers buying in less than car lots.

This committee, we understand, is made up largely of the second generation of their families engaged in the jobbing or warehouse business. In other words, they are, to use a Philadelphia expression, "Sons of the Founders."

One who lived during the active days of these founders, and did business with them, is happy that his conception of the steel jobbers of America is predicated upon his experiences of that period, in his association with these founders.

Perhaps it would be unfair to the sons of the founders to say that here in New York, over in Philadelphia, and out in Chicago, we have not yet found our bearings with our rather cumbersome incorporated warehouse companies. Perhaps it will be impossible ever to operate such corporations as smoothly as the firms or partnerships of earlier days when the "head of the firm" was always available.

One who knows might ask the present-day jobber whether he has played the game fairly; might ask him whether he did not abuse some of the privileges and advantages the mills tried to give him; might ask him whether he was just a little over-ambitious and covetous with regard to the other fellow's business, and sometimes the other fellow was his own customer.

We need go back no further than the investigation of the United States Steel Corporation by the Stanley Committee of Congress. This investigation brought out the fact that certain important mills were granting rebates to certain important jobbers. Just as soon as this information was made public, all jobbers of standing claimed the same consideration, and it was granted. Soon, however, mills claimed jobbers were diverting shipments in transit, giving important customers part of their rebate, and underselling the mills. In justice to their other customers the mills had to withdraw these concessions.

The jobber handling heavy structural steel gained the impression that the important fabricators were enjoying concessions through the mills selling bars, etc., on the structural card extra basis. These jobbers decided to go after this concession, so that today practically every important jobber in the country does some fabricating.

They get most of their fabricated orders from buyers who did business with the smaller fabricating shops that were at one time desirable customers of the jobbers. The result is that these small fabricators have sought out the mills to take their orders, much more energetically than the mills have sought their business.

The jobber alone knows whether he has made more profit in his fabricating than he would have made had he assisted some shops in getting the jobs, and had

sold the shops the material required at the regular prices.

Numerous instances can be cited where the jobber has not stuck to his job. The jobber has a real job and has a real place in the steel business. He is entitled to proper compensation for the job he performs. Perhaps the $20 per ton spread granted jobbers by the War Industries Board enabled them to make considerable money during the war period. Many of their customers are of the opinion that the war spread of $20 should have been eliminated long ago, and apparently many of the jobbers were of the same opinion, as the $20 spread has been generally disregarded for some time.

The jobber can handle poor accounts better than the mill, for the reason that he has a man on the street to make daily or weekly collections, and can usually get something on account.

Carrying a complete stock, he is in position to render quick service in emergency, or in normal cases where customers do not wish to tie up working capital by carrying stocks.

No mill representative with a proper conception of modern business denies the jobber his proper place. No jobber with proper conception of modern business should try to deny the mill its proper place.

The jobber must bear in mind there is no service he performs which could not be performed by the mill with just a little reorganization. The present day efficient service of the railroads and the possibilities of motor-truck transportation make it easy for mills to work out quick deliveries.

Most jobbers now buy from mills at prices $2 to $3 per ton lower than the price these same mills secure from the "ordinary run of trade." This is not an act of discrimination against the small buyer, but it is proper compensation to the jobber for services rendered.

I repeat, the jobber should "stick to his job." He must not encroach upon the territories of the mills, nor should he go after trade which properly belongs to his prospective customers.

We are entering 1926 with encouraging prospects for a good normal business year. The steel trade will have its full share of whatever prosperity develops. The jobbers or warehouses will prosper accordingly.

A greater volume of business will keep them occupied so that they will be able to minimize or overlook entirely many of their troubles which now loom large. Destructive competition among themselves in certain important centers will disappear; and we predict that if the jobber sticks to his job, 1926 will prove for him a very satisfactory business year.

AN OLD-TIMER.

Jan. 5.

## Testing Metals for Aircraft

*To the Editor:* The articles in THE IRON AGE of Dec. 17 and 31, by Niel S. Otey, on "Testing of Metals for Aircraft," are indeed timely in their expressed purpose of contributing to a more accurate and complete knowledge of the properties of the high grade metals of construction. The introductory article (Dec. 17) contains data plainly representing a large amount of original and conscientious work, and is a valuable contribution to the literature.

The second article, containing proposed specifications, is based mainly upon tentative specifications, drawn up at the Naval Aircraft Factory, which have been in a process of development for several years, and which represent the cooperative effort of a considerable number of individuals, including representatives of the Air Service, and other Government departments, leading manufacturers of aircraft materials and others, too numerous to mention here. Those tentative specifications are still in an unfinished stage, and are far from satisfactory to the majority concerned in their development. The author has elaborated and enlarged upon them according to his personal views.

Specifications governing the inspection and testing of metals, of as broad a character as those in question, seem not to be the province of any one industry, but of all industries which use or may use the type of material concerned. The need for specifications, governing the form of specimens and methods of test to be used in testing sheet, bar and tubing of small thickness, has long been recognized, although it has perhaps been felt most acutely in the aircraft industry.

Special groups of the American Society for Testing Materials have recently been organized to study this subject and carry forward the work which has already been done, with the aim of developing specifications which may be acceptable to industry in general, as well as to the aircraft industry, to Government departments and various technical bodies. Plainly, this is a large undertaking, and one in which haste can best be made slowly. It is not, however, being neglected.

Philadelphia, Jan. 6. HORACE C. KNERR,
Advisory Metallurgist, Naval Aircraft Factory.

## JAPAN BUYS SHEETS

### Total of About 7000 Tons at Year End—American Importers Quote on Rails

NEW YORK, Jan. 12.—In the closing week of last year export trade with Japan showed considerable activity and there have been a few purchases since on inquiries pending for several weeks. A feature of the year end activity was the purchasing of light gage black sheets, a total of about 7000 tons or more being covered with American mills, with the market at about $84 per ton, c.i.f. Japan, for 13 sheets to the bundle. At the same time it is understood that 8000 to 10,000 tons of light gage sheets were purchased in the British market, which was about $83 per ton, c.i.f. Japan. It appears that revision of the Japanese tariff now under discussion is expected to increase the duty on black sheets to a level calculated better to protect the Japanese sheet industry and as such a change would probably become effective in March or by April 1. January-February delivery is the safest basis on which to make purchases intended to beat the tariff.

#### Japan Buys American Rails

A rail tonnage that brought out sharp competition and which has been awarded to a Japanese export house quoting on material from an American mill is that of the Hanshing-Kokudo Electric Tramway for 23 miles of 91-lb. high T-rails. The South Manchuria Railway Co., recently in the market for 50 miles of 100-lb. rails, has placed the entire order with the Yawata Government Works in Japan. An alcohol company in Formosa has closed on 3000 base boxes of prime tin plates with Mitsui & Co., New York, to be furnished by an American mill. Tin plate makers are reported to be practically all sold out for first quarter on tin plate waste waste and one large mill has contracted for most of its first half supply of waste waste.

#### American Importers Quote on Rails

American importers of European steel continue active in quoting on a large volume of inquiries and a sizable tonnage of business is reported being placed. It is understood that on the 10,000 tons of forging quality billets asked for by the Ford Motor Co., importers have been able to quote on 2000 to 3000 tons in most instances. It is apparently the intention of the Ford company to use this material in manufacturing cars for export, obtaining a drawback on the duty paid when the material goes out of the country.

Another large inquiry attracting the attention of importers is the request for prices on about 15,000 tons of rails by the Boston & Maine Railroad, which has expressed a willingness to consider European prices on a basis of quality equal to that of American mills. Sellers of foreign steel, however, do not expect to secure more than a small part of the total tonnage if any.

The manufacturer of agricultural equipment in Kentucky, which recently closed on a few hundred tons of bars with a German mill, on the understanding that a small trial order should prove satisfactory as to quality and delivery, is reported to have made a further purchase of a few hundred tons on the same basis.

# DECEMBER STEEL OUTPUT

## Total Larger Than November but Daily Rate 3381 Tons or 2.1 Per Cent Less

The production of steel ingots in the United States in December was larger than in November, though the daily rate was less. At 152,916 gross tons per day the December output was 3381 tons less than that of November, a decrease of 2.1 per cent. This compares with an increase in November over October of 8.4 per cent, and in October over September of 7.3 per cent. The December total production, estimated for all companies at 3,974,824 tons, was about 1.75 per cent larger than the 3,907,437 tons made in November.

The statistics of the American Iron and Steel Insitute show that the December production of the companies which made 94.43 per cent of the country's total in 1924 was 3,754,371 tons. Assuming that the 5.57 per cent not reporting produced at the same rate, a total December output is indicated of 3,975,824 tons.

The total production for 1925 of 44,186,977 tons was 7,375,820 tons, or 20 per cent, in excess of the 1924 output.

The table gives the production by months of the different kinds of steel, together with estimated daily rates for all companies.

*Monthly Production of Steel Ingots, Reported by Companies Which Made 94.43 Per Cent of the Steel Ingot Production in 1924*

(Gross Tons)

| Months, 1925 | Open-Hearth | Bessemer | All Other | Calculated Monthly Production, All Companies | Approximate Daily Production, All Companies |
|---|---|---|---|---|---|
| Jan. .... | 3,262,748 | 689,996 | 11,960 | 4,198,564 | 155,502 |
| Feb. .... | 2,931,964 | 602,042 | 13,014 | 3,756,243 | 156,510 |
| March .. | 3,336,169 | 614,860 | 13,633 | 4,198,520 | 161,482 |
| April ... | 2,857,802 | 515,715 | 14,182 | 3,587,524 | 137,982 |
| May .... | 2,754,130 | 497,708 | 13,790 | 3,458,253 | 133,010 |
| June ... | 2,538,988 | 476,945 | 12,490 | 3,207,056 | 123,348 |
| July ... | 2,444,969 | 457,095 | 13,547 | 3,087,590 | 118,753 |
| Aug. ... | 2,696,667 | 523,734 | 12,914 | 3,424,034 | 131,694 |
| Sept. ... | 2,737,251 | 547,121 | 13,977 | 3,492,904 | 134,342 |
| Oct. .... | 3,075,995 | 584,567 | 15,624 | 3,893,028 | 144,196 |
| Nov. ... | 3,091,361* | 581,347 | 17,085 | 3,907,437* | 156,297* |
| Dec. ... | 3,169,224 | 569,304 | 15,843 | 3,975,824 | 152,916 |
| Total.. | 34,897,268 | 6,660,434 | 168,059 | 44,186,977 | 142,080 |
| *Revised. | | | | | |
| 1924 | | | | | |
| Jan. ... | 2,766,534 | 667,032 | 12,577 | 3,649,913 | 135,182 |
| Feb. ... | 2,902,641 | 695,905 | 14,085 | 3,826,246 | 153,050 |
| March .. | 3,249,783 | 706,801 | 15,260 | 4,206,699 | 161,796 |
| April ... | 2,575,788 | 573,381 | 12,356 | 3,348,466 | 128,787 |
| May .... | 2,060,896 | 425,099 | 6,648 | 2,640,034 | 97,779 |
| June ... | 1,637,660 | 310,070 | 2,622 | 2,065,676 | 82,627 |
| July ... | 1,525,912 | 241,880 | 5,162 | 1,877,789 | 72,223 |
| Aug. ... | 2,042,820 | 361,781 | 5,764 | 2,552,891 | 98,188 |
| Sept. ... | 2,252,976 | 409,922 | 6,864 | 2,827,625 | 108,755 |
| Oct. .... | 2,505,403 | 438,468 | 7,058 | 3,125,418 | 115,756 |
| Nov. ... | 2,479,147 | 459,147 | 8,403 | 3,121,149 | 124,846 |
| Dec. ... | 2,811,771 | 546,506 | 11,707 | 3,569,251 | 137,279 |
| Total.. | 28,811,331 | 5,836,194 | 108,506 | 36,811,157 | 117,984 |

# HEALD CENTENARY

## Celebration by Well Known Worcester Machine Tool Company

The Heald Machine Co., Worcester, Mass., celebrated the 100th anniversary of its foundation, with informal exercises at the plant on Jan. 7. The employees presented to James N. Heald, the treasurer and general manager, a testimonial in the form of a brass tablet, with an inscription expressing their esteem. The frieze, in deep bas relief, contains an oak tree, to symbolize growth from a small beginning, while beneath the inscription is sculptured a birdseye view of Heald Village in the neighboring town of Barre, where the industry was founded in 1826 by Stephen Heald.

Mr. Heald, for the company, gave each of the employees whose term of service was over 20 years a purse of gold, and among other employees, each of those who had been with the company more than 15 years received a gold watch.

In the beginning the Heald business was that of a machine jobbing shop. As shown by the first ledger kept by Stephen Heald, a day's pay ranged from 50 cents to $1; rent of a lathe per day was 25c., and payments instead of being received in money were for the most part in merchandise. On the credit side of that early ledger, in 1826, entries included 12 yards of shirting, four gallons of rum, a barrel of cider, five hens, three kitchen chairs and a pair of shoes, all received by the shop in payment for product.

The shop began to build wood-working machinery and agricultural and wire-drawing machinery, and in 1850 it became expedient to establish a foundry, though coal and pig iron had to be hauled 25 miles from the nearest railroad. After 1890, the year of Stephen Heald's death, the business was carried on by Leander S. Heald, the son, and James N. Heald, the grandson, as L. S. Heald & Son, and the manufacture of grinding machines was begun, including drill grinders, center grinders and grinding attachments.

In 1903 the younger Heald bought out his father's interest, and moved to Worcester, organizing the present Heald Machine Co. The Heald ring and surface grinder was put on the market, and this was followed soon by the cylinder grinder and a little later by the line of internal grinders. These machines have been developed to maintain their high place in the trade.

It is interesting to note that at the centennial exercises there were present the two sons of James N. Heald, Roger N. and Richard A. Heald, great-grandsons of the founder, and the fourth generation in the active management of the business.

## Another Large Increase in Unfilled Steel Orders

Unfilled orders on the books of the United States Steel Corporation as of Dec. 31 aggregated 5,033,364 tons, an increase of 451,584 tons over those which remained unfilled on Nov. 30. This compares with an increase of 472,597 in November, 391,886 tons in October and 204,494 tons in September, the first one since February. There had been decreases from March to the end of August. A year ago the unfilled business was 4,816,676 tons, or 216,688 tons less than for Dec. 31 last year. Following is the unfilled tonnage as reported by months, beginning with January, 1923:

| | 1925 | 1924 | 1923 |
|---|---|---|---|
| Jan. 31..... | 5,037,323 | 4,798,429 | 6,910,776 |
| Feb. 28..... | 5,284,771 | 4,912,901 | 7,283,989 |
| March 31..... | 4,863,564 | 4,782,807 | 7,403,332 |
| April 30..... | 4,446,568 | 4,208,447 | 7,288,509 |
| May 31..... | 4,049,800 | 3,628,089 | 6,981,351 |
| June 30..... | 3,710,458 | 3,262,505 | 6,386,261 |
| July 31..... | 3,539,467 | 3,187,072 | 5,910,763 |
| Aug. 31..... | 3,512,803 | 3,289,577 | 5,414,663 |
| Sept. 30..... | 3,717,297 | 3,473,780 | 5,035,750 |
| Oct. 31..... | 4,109,183 | 3,525,270 | 4,672,825 |
| Nov. 30..... | 4,581,780 | 4,031,969 | 4,368,584 |
| Dec. 31..... | 5,033,364 | 4,816,676 | 4,445,339 |

The high record in unfilled orders was 12,183,083 tons, at the close of April, 1917. The lowest was 2,674,757 tons, on Dec. 31, 1910.

## Opens an Iron Mine in Palmer District

CLEVELAND, Jan. 11.—A new mine in the Palmer district of the Marquette Range will be opened the coming season by the Palmer Mining Co., a Pickands-Mather & Co. interest, which was recently organized and which leased the property from the Volunteer Iron Co., owner of the fee. The property covers an area of 160 acres adjoining the Maitland mine. It is only a short distance from the town of Palmer. The Bethlehem Steel Co. is associated with the Pickands-Mather & Co. in ownership in the Palmer Mining Co., and probably some other consumers will acquire an interest in the Palmer company. A contract has been placed for stripping the mine, which will be completely electrified. A crushing plant with a daily capacity of 3000 tons will be erected. The product will be silicious ore and the company expects to mine 150,000 tons this year. Mine operation will start about July 1.

# British Domestic Market Improved

## Pig Iron and Finished Steel Advance—Belgian Strikers Refuse Employers' Terms

LONDON, ENGLAND, Jan. 11.
(*By Cable*)

THE pig iron outlook is brighter. With domestic demand for Cleveland well sustained and prompt shipment supplies scarce, some makers are asking 6d. extra for forward contracts. Export demand, however, is meager. Both domestic and Continental demand for hematite continues brisk with the shortage of supplies unrelieved.

Foreign ore is quiet. Bilbao Rubio is stronger at 21s. to 21s. 6d. c.i.f. Tees.

The recent improvement in finished iron and steel is being maintained and makers have advanced domestic prices of plates 2s. 6d. Export values, however, are unaltered. New shipbuilding contracts are still scarce but the demand for structural steel and engineering material is moderately active with inquiry from Australian and Indian as well as domestic consumers. The London & North Eastern Railway has purchased 33,000 tons of British rails. John Bradley & Co., Ltd., has acquired Roberts & Cooper, Ltd., with capital of £112,000.

Tin plate is quiet and easier. Makers have sold at 19s. 3d. basis IC, f.o.b. works. The Port pooling plan is not yet operating.

Galvanized sheets are moderately active but prices are weakening. Black sheets are quiet.

The Continental iron and steel markets are moderately active with British users active buyers. As high as £4 10s. f.o.b. has been offered for billets, but supplies are unobtainable. Sheet bars have sold at £4 15s. 6d. f.o.b. and tin plate bars at £5 3s. 6d. delivered. South Wales merchant bars have sold at £5 8s. 6d. f.o.b. No. 3 iron bars have been quoted up to £6 5s. f.o.b. The Charleroi strike continues, more than 70 per cent of the workers voting against acceptance of the employers' terms. The floods in Belgium and France are subsiding but the Cockerill and Angleur works probably will be unable to resume full operation for two to three weeks, although other Belgian plants are restarting.

# LUXEMBURG MILLS FILLED

## Orders from United States and Japan—Prices Higher Than French and Belgian

LUXEMBURG, Dec. 23.—The steel market has been generally affected by depreciation of the French franc, the competition of French mills having forced a slight lowering of prices by Luxemburg makers. Extension of deliveries on most products by French makers has enabled Luxemburg mills to strengthen their prices and maintain them at a slightly higher level than was possible when French competition was at its height in November. Throughout the period of French competition Luxemburg mills have in most instances been fairly well booked with export orders and only occasionally been forced to make large concessions to obtain needed tonnage. Among the export orders being executed is a satisfactory volume of business from the United States and Japan. A moderate volume of business that had developed with China was seriously curtailed early in the fall by the civil war.

Practically all products are in fair demand with the possible exception of heavy sheets which continue inactive. Recently several desirable orders for railroad material have been taken by Luxemburg mills. It is noteworthy, perhaps, that current prices are in most instances 6d. to 1s. per metric ton higher than the quotations of Belgian and French works. The sizable backlog and continued booking of desirable business is explained in Luxemburg by the fact that when the Grand Duchy was united with Germany in the Zollverein, the steel men of the country acquired considerable knowledge of export markets and have been able to quickly establish a strong and permanent export trade.

**British and Continental European prices per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at $4.85 per £, as follows:**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Durham coke, del'd | £1 | 2½s. | | | | | $5.45 | | | |
| Bilbao Rubio ore† | 1 | 0½ | | | | | 4.97 | | | |
| Cleveland No. 1 fdy. | 3 | 11 | and | £3 | 11½* | s. | 17.21 | and | 17.33* | |
| Cleveland No. 3 fdy. | 3 | 6 | | | | | 16.00 | | | |
| Cleveland No. 4 fdy. | 3 | 7½ | and | 3 | 8* | | 16.37 | and | 16.49 | |
| Cleveland No. 4 forge | 3 | 7 | and | 3 | 7½* | | 16.24 | and | 16.37* | |
| Cleveland basic | 3 | 8 | and | 3 | 8½* | | 16.49 | and | 16.62* | |
| East Coast mixed | 3 | 17 | to | 3 | 17½ | | 18.66 | to | 18.78 | |
| East Coast hematite | 4 | 19 | | | | | 24.00 | | | |
| Ferromanganese | 15 | 10 | | | | | 75.18 | | | |
| *Ferromanganese | 15 | 5 | | | | | 73.96 | | | |
| Rails, 60 lb. and up | 7 | 10 | to | 8 | 0 | | 36.37 | to | 38.80 | |
| Billets | 6 | 0 | to | 7 | 10 | | 29.10 | to | 36.37 | |
| Sheets and tin plate bars, Welsh | 6 | 5 | | | | | 30.31 | | | |
| Tin plates, base box | 0 | 19¼ | to | 0 | 19½ | | 4.63 | to | 4.72 | |
| | | | | | | | C. per Lb. | | | |
| Ship plates | 7 | 2½ | to | 7 | 12½ | | 1.54 | to | 1.65 | |
| Boiler plates | 11 | 0 | to | 11 | 10 | | 2.56 | to | 2.67 | |
| Tees | 7 | 7½ | to | 7 | 17½ | | 1.59 | to | 1.69 | |
| Channels | 6 | 12½ | to | 7 | 2½ | | 1.43 | to | 1.54 | |
| Beams | 6 | 7½ | to | 6 | 17½ | | 1.38 | to | 1.48 | |
| Round bars, ¾ to 3 in. | 7 | 17½ | to | 8 | 7½ | | 1.67 | to | 1.81 | |
| Steel hoops | 10 | 10 | and | 11 | 0* | | 2.27 | and | 2.35* | |
| Black sheets, 24 gage | 11 | 5 | to | 11 | 10 | | 2.44 | to | 2.67 | |
| Black sheets, Japanese specifications | 15 | 5 | | | | | 3.30 | | | |
| Galv. sheets, 24 gage | 16 | 7½ | to | 16 | 15 | | 3.55 | to | 3.61 | |
| Cold rolled steel strip, 20 gage | 18 | 0 | | | | | 3.90 | | | |

*Export price.
†Ex-ship, Tees, nominal.

### Continental Prices, All F.O.B. Channel Ports

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Foundry pig iron: (a) | | | | | | | | | |
| Belgium | £3 | 10s. | to | £3 | 2½s. | | $14.05 | to | $14.90 |
| France | 3 | 10 | to | 3 | 2½ | | 14.05 | to | 14.90 |
| Luxemburg | 3 | 10 | to | 3 | 2½ | | 14.05 | to | 14.90 |
| Basic pig iron: (a) | | | | | | | | | |
| Belgium | 2 | 19 | to | 3 | 7 | | 14.30 | to | 16.25 |
| France | 2 | 19 | to | 3 | 7 | | 14.30 | to | 16.25 |
| Luxemburg | 2 | 19 | to | 3 | 7 | | 14.30 | to | 16.25 |
| Coke | 0 | 18 | | | | | 4.37 | | |
| Billets: | | | | | | | C. per Lb. | | |
| Belgium (Nom.) | 4 | 9½ | to | 4 | 11½ | | 21.70 | to | 22.18 |
| France (Nom.) | 4 | 9½ | to | 4 | 11½ | | 21.70 | to | 22.18 |
| Merchant bars: | | | | | | | C. per Lb. | | |
| Belgium | 5 | 8 | to | 5 | 10 | | 1.17 | to | 1.19 |
| Luxemburg | 5 | 8 | to | 5 | 10 | | 1.17 | to | 1.19 |
| France | 5 | 8 | to | 5 | 10 | | 1.17 | to | 1.19 |
| Joists (beams): | | | | | | | | | |
| Belgium | 5 | 0 | to | 5 | 2½ | | 1.08 | to | 1.10 |
| Luxemburg | 5 | 0 | to | 5 | 2½ | | 1.08 | to | 1.10 |
| France | 5 | 0 | to | 5 | 2½ | | 1.08 | to | 1.10 |
| Angles: | | | | | | | | | |
| Belgium | 5 | 2 | to | 5 | 4 | | 1.12 | to | 1.15 |
| ⅛-in. plates: | | | | | | | | | |
| Belgium | 6 | 2½ | to | 6 | 5 | | 1.34 | to | 1.35 |
| Germany | 6 | 2½ | to | 6 | 5 | | 1.34 | to | 1.35 |
| ⅜-in. ship plates: | | | | | | | | | |
| Belgium | 5 | 10 | to | 5 | 12½ | | 1.19 | to | 1.20 |
| Luxemburg | 5 | 10 | to | 5 | 12½ | | 1.19 | to | 1.20 |
| Sheets, heavy: | | | | | | | | | |
| Belgium | 6 | 3 | to | 6 | 4 | | 1.33 | to | 1.34 |
| Germany | 6 | 3 | to | 6 | 4 | | 1.33 | to | 1.34 |

(a) Nominal.

# PIG IRON RATES CUT

## Reductions from Northern Ohio Furnaces Announced by Two Railroads

CLEVELAND, Jan. 11.—Reduced freight rates on pig iron from northern Ohio furnaces have been announced by the New York Central and the Wheeling & Lake Erie railroads. They will prove beneficial to Lake furnaces in that they wipe out to a considerable extent inequalities in pig iron rates that have worked to the disadvantage of these furnaces. Under the old rates there was a differential of as much as 38c. a ton in favor of the Ironton, Ohio, district as compared with Lake furnaces, for shipment to practically equidistant consuming points in central Ohio. The same disadvantage to Lake Erie furnaces has existed in rates to some sections of Indiana as compared with rates from Chicago.

The reductions just announced are the first of a series of rate readjustments on pig iron that are expected to be made in the territory of Central Freight Association, extending from Buffalo to the Mississippi River and to the Ohio River on the south.

The new rate schedules prepared by the two railroads were approved by the Ohio Public Utilities Commission, but the Central Freight Association wanted the proposed reductions suspended. It is stated that the association did not favor any rate changes until a complete rate readjustment on pig iron in its territory could be worked out. However, the Interstate Commission refused to order a suspension. The New York Central's new rates became effective Jan. 7, and the Ohio rates of the Wheeling & Lake Erie went into effect Jan. 9. The interstate rates of the latter railroad will become effective Feb. 10.

Rates per gross ton to principal consuming points are as follows:

### From Toledo

*Wheeling & Lake Erie Railway Only*

| | Old Rate | New Rate |
|---|---|---|
| Canton, Ohio | $2.02 | $1.77 |
| Massillon, Ohio | 2.27 | 1.77 |
| Coshocton, Ohio | 2.65 | 2.27 |
| Zanesville, Ohio | 2.65 | 2.39 |
| Orrville, Ohio | 2.02 | 1.77 |

### From Toledo

*New York Central and Wheeling & Lake Erie Railroads*

| | Old Rate | New Rate |
|---|---|---|
| Columbus and Delaware, Ohio | $2.27 | $2.10 |
| Galion and Marion, Ohio | 1.89 | 1.76 |
| Mansfield, Crestline and Shelby, Ohio | 2.02 | 1.76 |
| Dayton, Springfield, Sidney and Troy, Ohio | 2.39 | 2.27 |
| South Bend, La Porte and Mishawaka, Ind. | 2.90 | 2.65 |
| Elkhart and Goshen, Ind. | 2.65 | 2.50 |
| Fort Wayne, Kendallville and Auburn, Ind. | 2.27 | 2.02 |
| Terre Haute, Ind. | 3.65 | 3.28 |
| Greensburg, Columbus and Shelbyville, Ind. | 3.65 | 2.90 |
| Cambridge City and Connersville, Ind. | 2.90 | 2.65 |
| Michigan City, Ind. | 3.15 | 2.90 |
| Battle Creek and Marshall, Mich. | 2.65 | 2.50 |

### From Cleveland

*Wheeling & Lake Erie Railway*

| | Old Rate | New Rate |
|---|---|---|
| Cincinnati, Ohio | $3.28 | $2.90 |
| Columbus, Ohio | 2.27 | 2.10 |
| Galion, Ohio | 2.27 | 1.76 |
| Mansfield, Ohio | 2.02 | 1.76 |
| Marion, Ohio | 2.27 | 1.89 |
| Springfield, Ohio | 2.52 | 2.39 |
| Troy, Ohio | 2.65 | 2.52 |

### From Cleveland

*Wheeling & Lake Erie Railway*

| | Old Rate | New Rate |
|---|---|---|
| Benton Harbor, Mich. | $4.41 | $3.53 |
| Battle Creek, Mich. | 4.20 | 3.28 |
| Auburn, Ind. | 3.02 | 2.90 |
| Cambridge City, Ind. | 3.53 | 2.90 |
| Columbus, Ind. | 4.70 | 3.15 |
| Connersville, Ind. | 3.53 | 2.90 |
| Elkhart, Ind. | 4.30 | 3.15 |
| Fort Wayne, Ind. | 3.02 | 2.90 |
| Goshen, Ind. | 3.78 | 3.15 |
| Greensburg, Ind. | 3.53 | 3.15 |
| Indianapolis, Ind. | 3.53 | 3.15 |
| Kendallville, Ind. | 3.02 | 2.90 |
| LaPorte, Ind. | 4.41 | 3.28 |
| Michigan City, Ind. | 4.41 | 3.53 |
| Mishawaka, Ind. | 4.40 | 3.28 |
| Shelbyville, Ind. | 3.53 | 3.15 |
| South Bend, Ind. | 4.40 | 3.28 |
| Terre Haute, Ind. | 4.41 | 3.53 |

The new Wheeling & Lake Erie schedules also include rate reductions on pig iron from Canton and Lorain, Ohio, where steel plant furnaces are located, and from Massilon, Ohio, where a steel plant furnace is being built.

# RATE REDUCTIONS BROAD

## New Pig Iron Rates from Ohio Furnaces Cover Wide Territory—Billet Rates Also Cut

WASHINGTON, Jan. 12.—Receiving the approval of the Public Utilities Commission of Ohio in reducing intrastate rates on pig iron effective Jan. 9, in the face of vigorous protest from the Central Freight Association and some inland merchant furnace interests, the New York Central and Wheeling & Lake Erie railroads have spread their reductions to sweep a wide section in Central Freight Association territory and have filed tariffs covering them with the Interstate Commerce Commission. The commission already has declined to suspend the New York Central tariff, cutting pig iron rates from Toledo, and it will therefore become effective on Jan. 17, as proposed. It is assumed that in view of its attitude toward the New York Central tariff, the commission also will permit the Wheeling & Lake Erie tariff to become effective Feb. 10, as proposed. The Wheeling & Lake Erie tariff, covering shipments from Canton, Cleveland, Massillon, Lorain, Toledo, Steubenville and Zanesville, Ohio, and Wheeling, W. Va., reduces rates on pig iron to important consuming points in Ohio, Indiana, Illinois, Kentucky, Michigan, Pennsylvania and Wisconsin, as does the New York Central tariff.

The Wheeling & Lake Erie tariff also makes reductions in rates on billets to points in Michigan. Its cuts in pig iron rates vary widely, ranging from 10c. a gross ton to as high as $1.15 a ton.

Typical reductions made in pig iron rates by the Wheeling & Lake Erie, stated in amounts per gross ton, follow:

| From | To | New Rate | Old Rate |
|---|---|---|---|
| Cleveland and Lorain | Ashland, Ohio | $1.76 | $2.02 |
| Massillon | Ashland, Ohio | 1.76 | 2.27 |
| Canton, Cleveland, Massillon and Lorain | Columbia City, Ind. | 3.15 | 3.78 |
| Canton, Cleveland, Massillon and Lorain | Crawfordsville, Ind. | 3.53 | 4.41 |
| Canton, Cleveland, Massillon and Lorain | Creston, Ohio | 1.64 | 1.76 |
| Toledo | Creston, Ohio | 1.76 | 2.27 |
| Canton, Cleveland, Massillon and Lorain | Crestline, Ohio | 1.76 | 2.27 |
| Canton, Cleveland, Massillon, Lorain and Toledo | Delaware, Ohio | 2.10 | 2.27 |
| Canton | Elkhart, Ind. | 3.26 | 4.41 |
| Massillon | Elkhart, Ind. | 3.26 | 4.40 |
| Lorain | Elkhart, Ind. | 3.15 | 4.20 |
| Wheeling and Steubenville | Frederic, Mich. | 6.10 | 6.43 |
| Cleveland | Frederic, Mich. | 5.40 | 5.54 |
| Canton, Cleveland, Massillon and Lorain | Indianapolis | 3.15 | 3.53 |
| Lorain | South Bend, Ind. | 3.28 | 4.41 |
| Canton | South Bend, Ind. | 3.28 | 4.20 |

### New Rates on Billets

Among changes made by the Wheeling & Lake Erie in rates on billets to points in Michigan were the following, stated in amounts per gross ton:

| From | To | New Rate | Old Rate |
|---|---|---|---|
| Steubenville and Wheeling | Alpena | $6.10 | $6.43 |
| Zanesville | Alpena | 5.70 | 5.80 |
| Canton | Cheboygan | 6.10 | 6.17 |
| Cleveland | Cheboygan | 5.60 | 6.00 |
| Massillon | Cheboygan | 5.80 | 6.17 |
| Lorain | Cheboygan | 5.50 | 5.90 |
| Steubenville | Cheboygan | 6.30 | 6.70 |
| Toledo | Cheboygan | 5.10 | 5.42 |

## Adoption of New Freight Rates from Eastern Mills Urged

WASHINGTON, Jan. 12.—Adoption of the Jones & Laughlin scale of rates on iron and steel products from Ivy Rock, Conshohocken, Pencoyd, Coatesville and Phoenixville, Pa., to New York and related points is urged by Charles S. Belsterling, counsel for the Alan Wood Iron & Steel Co., Philadelphia, in a petition to the Interstate Commerce Commission. This scale was recommended by Examiner W. M. Cheseldine in passing upon the complaint of the Alan Wood and other companies in eastern Pennsylvania, which held that rates from their plants to New York were unduly discriminatory, unreasonable and unduly prejudicial in favor of Bethlehem, Pa. Mr. Belsterling, however, asks that the findings of the examiner be amended to include unjust discrimination and undue prejudice by the carriers serving Bethlehem and that all of the defendants be required within 60 days after the finding to place all of the affected mills on the rate relationship proposed by the examiner. The request also is made that the regrouping be done on a basis of 25-mile blocks instead of five and 10-mile blocks, as proposed.

## Rates on Wire Rods to Kansas City Upheld

WASHINGTON, Jan. 12.—Carload rates on wire rods in coils to Kansas City from Chicago, Acme and Peoria, Ill.; Black Rock and Harriet, N. Y.; Portsmouth and New Boston, Ohio; Johnstown, Pittsburgh and Monessen, Pa., are not unreasonable or otherwise unlawful, according to a tentative opinion by Examiner Alfred S. Knowlton of the Interstate Commerce Commission. He has recommended to the commission that the complaint made against these rates by the Black Steel & Wire Co., Kansas City, be dismissed. The case had been reopened for further hearing.

## Rates on Tank Material Held Unreasonable

WASHINGTON, Jan. 12.—Passing upon the complaint of the Sinclair Crude Oil Producing Co., which was joined by a number of other shippers, Examiner Alfred S. Knowlton, in a tentative report to the Interstate Commerce Commission last week held that rates on tank material in carloads from points in Pennsylvania, Ohio, Illinois and Missouri to destinations in Oklahoma and Missouri are unreasonable. The examiner recommended that the commission find that rates on tank material should not exceed the rates on iron and steel pipe.

## Illinois Steel Co. Opposes Reopening Jones & Laughlin Rate Case

WASHINGTON, Jan. 12.—Contending that the petition of the railroads for rehearing in the Jones & Laughlin Steel Corporation rate case is "wholly speculative," Charles S. Belsterling, counsel for the Illinois Steel Co., Chicago, has filed an answer stating that the petition should be denied by the Interstate Commerce Commission.

"We are advised and believe that the carriers serving the Chicago steel producing district are now checking in the rates as established by the scale herein, and shortly the new schedule will be made effective," said Mr. Belsterling. "The undue prejudice, which the commission found, will, therefore, be removed and the carriers will receive substantial increases in their revenues from rates which were theretofore admitted by the complainant 'to be fair, just and reasonable for the service performed.'"

The answer declares that if the case is reopened, the issue upon the rehearing should be restricted solely to the readjustment of the rates from the mills in Pittsburgh and adjacent territories to the Western markets involved.

"There is, and can be no possible complaint, either on behalf of the carriers or of this one single complainant, the Jones & Laughlin Steel Co., of the rates from our mills to our nearby markets," the answer says.

The statement that it would require approximately $37,500,000 additional business in order to obtain the same net earnings as the carriers receive on the present volume of iron and steel traffic under the present rates is declared to be an "obvious and gross exaggeration."

"It must be perfectly clear to this commission that the carriers' fears as to the injurious effect of the required adjustment upon their revenues are somewhat strained," it is contended, "for during the calendar year 1923 the total revenue received by all the carriers in the Eastern district on bar and sheet iron, structural iron and iron pipe, amounted to but $100,000,000. This amount includes all long-haul traffic in the Official Classification territory and short-haul traffic in these large steel producing districts."

## Pittsburgh Coal Producers Association Has Disbanded

The Pittsburgh Coal Producers Association, founded in 1914 as the Pittsburgh Coal Operators Association, and embracing in its membership the principal commercial coal producers in the Pittsburgh district, has dissolved. In a statement announcing the dissolution of the organization, B. H. Canon, chairman of the executive committee, stated that it was caused directly by the prostration of the coal business of the past two years, which might be traced to wages and freight rates. Inability of most of the mine owners to operate them at the union wage rates and compete successfully with mines operated on lower wage scales has kept so many operations idle or on part time schedules that funds for the maintenance of the association have steadily dwindled.

Pittsburgh district operators also have suffered from the fact that, besides being bound by high wage scales, they were not favored by freight rates to the Lakes. Much of the coal for the Northwest until the past few years was shipped from Pittsburgh district mines, via Lake boats. On a mileage basis, Pittsburgh shipments carry a much higher rail rate to the Lake Erie docks than shipments from West Virginia and Kentucky. Those districts are non-union with wage scales about one-third less than in the Pittsburgh district. Loss of the Lake trade, while primarily due to these causes which enable Kentucky and West Virginia coal to move great distances at low prices, also is due to a growing preference for the coal of those districts, on the basis of quality.

## Take Bids on Links of Lakes-to-Gulf Waterway

CHICAGO, Jan. 12.—Bids have been opened on links in the Great Lakes-to-Gulf of Mexico deep waterway. The tenders are for construction work on the Brandon Road pool at Joliet, Ill., and on a lock and dam at Starved Rock. On two former occasions bids on this work were rejected, once because they were excessive and once because of litigation involving title to property required by the State. Ten bids were submitted on the Brandon Road pool job, the lowest, from the H. E. Culbertson Co., Cleveland, being $1,590,150. Thirteen bids were submitted on the Starved Rock project, the lowest being $1,475,832.

Bituminous coal mined in the United States during 1925 is estimated by the National Coal Association at 522,000,000 net tons. The total compares with 480,000,000 tons in 1924 and with 564,000,000 tons in 1923. The record production was that of 1918, with 580,000,000 tons.

# Iron and Steel Markets

## Railroad Activity Still Important

### Steel Mill Operations Show High Rate of Consumption — Large Sales of Domestic Ferromanganese—Coke Advances as Anthracite Parley Fails—Japan a Buyer of Sheets

IT has taken the first ten business days of the new year for the steel market to get a fair start, and much of its activity in that time has been in specifications rather than new orders. Mill operations in some cases are at a little more than pre-holiday schedules. The 10-day suspension of a large Cleveland open-hearth steel plant and of two Mahoning Valley sheet mills are exceptions.

While the heavy finished steel bookings of November brought out some suggestions of a movement toward higher prices, there are no indications today of such an effort as that of last January to stimulate specifications by advancing quotations.

Present bookings are regarded as more closely gaging consumption than did those of a year ago. The Steel Corporation's December gain of 452,000 tons in unfilled orders, which was larger than the expectation, brings the Corporation's total to 5,033,000 tons, or only 4000 tons less than that with which the old year started.

Another week in which more than 4500 freight cars were ordered brings also reports of car-building programs in preparation by four lines at Chicago. The Union Pacific and Baltimore & Ohio have each ordered 2000 freight cars and passenger equipment, and the New York Central has bought 500 additional automobile cars.

Track accessories continue to figure largely in railroad orders, Chicago reporting 25,000 tons this week. The one large rail inquiry still pending is that of the Southern Pacific for 100,000 tons.

In connection with the Boston & Maine quota of 15,000 tons of rails for 1926, it is stated that bids are to be received from foreign mills. In the Pacific Northwest an industrial company has just bought 500 tons of Belgian rails.

The week's structural awards of 45,000 tons include a blast furnace for the Weirton Steel Co., Weirton, W. Va., 4000 tons, and 10 barges for the Inland Waterways Corporation, 5000 tons.

An interesting development is the closing of some large ferromanganese contracts by domestic producers, the total being put at 75,000 tons. These indicate that a greater share of the ferromanganese used in domestic steel works in 1926 will be produced at home than in many years. Such a situation would offset in some degree the large shipments foreign pig iron producers are making to this country. There are reports that lower British prices on ferromanganese are in prospect, but no definite announcement has been made.

Concessions of $2 a ton have appeared in the black sheet market. In the Central West the course of automobile manufacture in the next two months is important to the sheet industry. Some of the makers are proceeding cautiously in respect to their steel orders.

It is expected that 3000 tons of concrete reinforcing bars for piers at Mobile, Ala., will go to an American mill, though prices on foreign bars were lower.

The failure of the anthracite strike parley in New York has added much to the recent strength in the coke market. Connellsville coke is $1 higher than a week ago. While spot blast furnace coke is $6 to $6.50, pig iron makers had covered for first quarter at $3.75 to $4, so that their costs will not be affected for the present.

Slight yielding in the Eastern pig iron market is indicated in reports of foundry iron at $22.50, furnace, which is 50c. a ton below recent quotations. A locomotive company has bought 6000 tons of low phosphorus iron.

Reductions in freight rates on pig iron from northern Ohio furnaces to points in Ohio, Indiana and Michigan will put those producers in a stronger position in competing with southern Ohio and Chicago stacks.

The scrap market has not shown the strength that brokers looked for. In the East there is some weakness, notwithstanding a purchase of 30,000 tons of melting steel by a leading steel interest at $17.50, delivered.

Japan bought some 15,000 tons of light gage black sheets, placing 7000 tons in this country and probably all of the remainder in Great Britain. Expected revision of the Japanese tariff brought this business to a head. An American mill will supply 3300 tons of rails for a Japanese electric railroad, but the Yawata Government works will roll 8000 tons for South Manchuria. An order for 3000 base boxes of tin plate for Formosa has also come to the United States.

For the seventh successive week THE IRON AGE composite price for pig iron stands at $21.54 per ton. One year ago it was $22.50, and six months ago, $18.96. The finished steel composite price remains at 2.453c. per lb. Four months ago it was 2.396c., the low point of last year.

## Pittsburgh

### Steel Market Quiet But Stable—Coke Advances Sharply

PITTSBURGH, Jan. 12.—The steel market is emerging from its year-end lull, but the process is somewhat slow and the increase in orders is not so great as to cause any speeding of mill operations. Actually the operation of sheet and strip mills is being suspended here and there over the last day or two of the week, because current demands are so easily supplied. Those who expected the market to become really brisk by this time are disappointed, but there was no very general expectation that the gain in incoming business would amount to much before Jan. 15, and conse-

# A Comparison of Prices

**Advances Over the Previous Week in Heavy Type, Declines in Italics**
**At Date, One Week, One Month, and One Year Previous**

## For Early Delivery

| **Pig Iron,** Per Gross Ton: | Jan. 12, 1926 | Jan. 5, 1926 | Dec. 15, 1925 | Jan. 13, 1925 |
|---|---|---|---|---|
| No. 2X, Philadelphia‡ | $24.26 | $24.26 | $24.26 | $25.01 |
| No. 2, Valley furnace† | 20.50 | 20.50 | 20.50 | 22.50 |
| No. 2, Southern, Cin'ti† | 25.69 | 25.69 | 25.69 | 24.05 |
| No. 2, Birmingham, Ala.† | 22.00 | 22.00 | 22.00 | 20.00 |
| No. 2 foundry, Ch'go furn.* | 23.00 | 23.00 | 23.00 | 24.00 |
| Basic, del'd, eastern Pa. | 23.00 | 23.00 | 23.00 | 24.25 |
| Basic, Valley furnace | 20.00 | 20.00 | 20.00 | 22.00 |
| Valley Bessemer del'd Phg. | 22.76 | 22.76 | 22.76 | 24.76 |
| Malleable, Chicago furn.* | 23.00 | 23.00 | 23.00 | 24.00 |
| Malleable, Valley | 20.50 | 20.50 | 20.50 | 22.50 |
| Gray forge, Pittsburgh | 21.76 | 21.76 | 21.76 | 23.76 |
| L. S. charcoal, Chicago | 29.04 | 29.04 | 29.04 | 29.04 |
| Ferromanganese, furnace | 115.00 | 115.00 | 115.00 | 110.00 |

| **Rails, Billets, etc.,** Per Gross Ton: | | | | |
|---|---|---|---|---|
| O.-h. rails, heavy, at mill | $43.00 | $43.00 | $43.00 | $43.00 |
| Bess. billets, Pittsburgh | 35.00 | 35.00 | 35.00 | 37.00 |
| O.-h. billets, Pittsburgh | 35.00 | 35.00 | 35.00 | 38.00 |
| O.-h. sheet bars, Phg. | 36.00 | 36.00 | 36.00 | 39.00 |
| Forging billets, base, Phg. | 40.00 | 40.00 | 40.00 | 42.50 |
| O.-h. billets, Phila. | 41.30 | 41.30 | 40.30 | 41.67 |
| Wire rods, Pittsburgh | 45.00 | 45.00 | 45.00 | 48.00 |
| Light rails at mill | 36.00 | 36.00 | 36.96 | 40.32 |
| | Cents | Cents | Cents | Cents |
| Skelp, gr. steel, Pbg., lb. | 1.90 | 1.90 | 1.90 | 2.00 |

| **Finished Iron and Steel,** | | | | |
|---|---|---|---|---|
| *Per Lb. to Large Buyers:* | Cents | Cents | Cents | Cents |
| Iron bars, Philadelphia | 2.22 | 2.22 | 2.22 | 2.28 |
| Iron bars, Chicago | 2.00 | 2.00 | 2.00 | 2.00 |
| Steel bars, Pittsburgh | 2.00 | 2.00 | 2.00 | 2.10 |
| Steel bars, Chicago | 2.10 | 2.10 | 2.10 | 2.10 |
| Steel bars, New York | 2.34 | 2.34 | 2.34 | 2.44 |
| Tank plates, Pittsburgh | 1.90 | 1.90 | 1.90 | 2.00 |
| Tank plates, Chicago | 2.10 | 2.10 | 2.10 | 2.20 |
| Tank plates, New York | 2.09 | 2.09 | 2.04 | 2.34 |
| Beams, Pittsburgh | 1.90 | 1.90 | 1.90 | 2.10 |
| Beams, Chicago | 2.10 | 2.10 | 2.10 | 2.20 |
| Beams, New York | 2.24 | 2.24 | 2.24 | 2.34 |
| Steel hoops, Pittsburgh | 2.50 | 2.50 | 2.50 | 2.50 |

*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.

†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 2.75.

| **Sheets, Nails and Wire,** | Jan. 12, 1926 | Jan. 5, 1926 | Dec. 15, 1925 | Jan. 13, 1925 |
|---|---|---|---|---|
| *Per Lb. to Large Buyers:* | Cents | Cents | Cents | Cents |
| Sheets, black, No. 28, Phg. | 3.35 | 3.35 | 3.35 | 3.60 |
| Sheets, black, No. 28, Chicago dist. mill | 3.45 | 3.45 | 3.45 | 3.70 |
| Sheets, galv., No. 28, Phg. | 4.60 | 4.60 | 4.60 | 4.75 |
| Sheets, galv., No. 28, Chicago dist. mill | 4.70 | 4.70 | 4.70 | 4.85 |
| Sheets, blue, 9 & 10, Phg. | 2.50 | 2.50 | 2.50 | 2.70 |
| Sheets, blue, 9 & 10, Chicago dist. mill | 2.60 | 2.60 | 2.60 | 2.80 |
| Wire nails, Pittsburgh | 2.65 | 2.65 | 2.65 | 2.85 |
| Wire nails, Chicago dist. mill | 2.70 | 2.70 | 2.70 | 2.95 |
| Plain wire, Pittsburgh | 2.50 | 2.50 | 2.50 | 2.60 |
| Plain wire, Chicago dist. mill | 2.55 | 2.55 | 2.55 | 2.70 |
| Barbed wire, galv., Pbg. | 3.35 | 3.35 | 3.35 | 3.55 |
| Barbed wire, galv., Chicago dist. mill | 3.40 | 3.40 | 3.40 | 3.65 |
| Tin plate, 100 lb. box, Pbg. | $5.50 | $5.50 | $5.50 | $5.50 |

| **Old Material,** Per Gross Ton: | | | | |
|---|---|---|---|---|
| Carwheels, Chicago | $18.00 | $18.00 | $18.50 | $22.50 |
| Carwheels, Philadelphia | 18.50 | 18.50 | 18.50 | 19.50 |
| Heavy steel scrap, Pbg. | 19.00 | 19.00 | 19.00 | 22.00 |
| Heavy steel scrap, Phila. | 17.50 | 17.50 | 17.50 | 20.00 |
| Heavy steel scrap, Ch'go. | 15.25 | 15.25 | 15.50 | 20.50 |
| No. 1 cast, Pittsburgh | 17.50 | 17.50 | 18.00 | 19.50 |
| No. 1 cast, Philadelphia | 18.50 | 18.50 | 18.00 | 20.50 |
| No. 1 cast, Ch'go (net ton) | 17.00 | 17.00 | 17.00 | 20.50 |
| No. 1 RR. wrot., Phila. | 18.50 | 18.50 | 18.50 | 21.00 |
| No. 1 RR. wrot. Ch'go (net) | 13.50 | 13.50 | 13.75 | 18.00 |

| **Coke, Connellsville,** Per Net Ton at Oven: | | | | |
|---|---|---|---|---|
| Furnace coke, prompt | **$6.00** | $4.75 | $3.75 | $4.00 |
| Foundry coke, prompt | **6.50** | 5.50 | 5.00 | 5.00 |

| **Metals,** | | | | |
|---|---|---|---|---|
| *Per Lb. to Large Buyers:* | Cents | Cents | Cents | Cents |
| Lake copper, New York | 14.25 | 14.25 | 14.25 | 15.25 |
| Electrolytic copper, refinery | 13.87½ | 13.87½ | 13.75 | 14.87½ |
| Zinc, St. Louis | **8.70** | 8.67½ | 8.55 | 7.87½ |
| Zinc, New York | **9.05** | 9.02½ | 8.90 | 8.22½ |
| Lead, St. Louis | 9.00 | 9.00 | 9.00 | 10.35 |
| Lead, New York | 9.25 | 9.25 | 9.25 | 10.60 |
| Tin (Straits), New York | 62.75 | 63.25 | 61.37½ | 59.80 |
| Antimony (Asiatic), N. Y. | 24.25 | 25.00 | 22.00 | 17.50 |

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

## THE IRON AGE Composite Prices

### Finished Steel

Jan. 12, 1926, 2.453c. Per Lb.

| | |
|---|---|
| One week ago | 2.453c. |
| One month ago | 2.453c. |
| One year ago | 2.560c. |
| 10-year pre-war average | 1.689c. |

Based on prices of steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 88 per cent of the United States output of finished steel.

| | High | | Low | |
|---|---|---|---|---|
| *1925* | 2.560c., | Jan. 6 | 2.396c., | Aug. 18 |
| *1924* | 2.789c., | Jan. 15 | 2.460c., | Oct. 14 |
| *1923* | 2.824c., | April 24 | 2.446c., | Jan. 2 |

### Pig Iron

Jan. 12, 1926, $21.54 Per Gross Ton

| | |
|---|---|
| One week ago | $21.54 |
| One month ago | 21.54 |
| One year ago | 22.50 |
| 10-year pre-war average | 15.72 |

Based on average of basic and foundry irons, the basic being Valley quotation, the foundry an average of Chicago, Philadelphia and Birmingham.

| | High | | Low | |
|---|---|---|---|---|
| *1925* | $22.50, | Jan. 13 | $18.96, | July 7 |
| *1924* | 22.88, | Feb. 26 | 19.21, | Nov. 3 |
| *1923* | 30.86, | March 20 | 20.77, | Nov. 20 |

quently there is a good measure of satisfaction over the way the market is acting.

No appreciable let-down is observed in ingot production, which remains at the recent average at 85 per cent of capacity. It is generally believed that this rate of production conforms with the present rate of consumption. This year, in marked contrast with a year ago, manufacturers are disposed to keep output more nearly in keeping with actual consumption as measured by specifications and orders. There is likewise no tendency to force prices to levels that cannot easily be maintained, because the effect of a reaction following an attempt to advance prices is to make consumers cautious. The desire of manufacturers seems to be to keep business flowing in steadily and this end is believed to be more readily attainable in price stability than in a fluctuating market.

A month ago following the heavy November bookings, there was much talk of higher prices, but in the meantime a considerable change of attitude has developed because consumers have disclosed no market inclination to depart from a policy of short-range buying. The attempt to advance semi-finished steel was stronger than in the finished products and had some measure of success in that approximately 40,000 tons of billets, slabs and sheet bars were sold at prices ranging from $2 to $3 a ton above the contract prices generally named for this quarter. The higher prices were possible because a shortage of steel, particularly the open-hearth grade, was feared, but lately consumers have become

convinced of the amplitude of supplies and it is noted that specifications against the high-priced contracts are not being made at all freely. Some makers who refrained from obligating themselves very heavily for first quarter tonnages, lately have been glad to accept business at the regular first quarter prices, or $35 for large billets and $36 for sheet bars and small billets and slabs.

The ending of the hard coal parley without a settlement has added to the strength of the coke market created by cold weather in the East. Based on what they can now obtain for crushed 48-hr. coke, Connellsville operators want at least $1 a ton more than they were getting a week ago. This puts the spot furnace coke market at $6 to $6.50 per net ton at ovens, and there is not much available even at that price, since yard crushed 48-hr. coke is commanding from $8 to $9 a ton and the cost of conversion is a matter of only 75c. to $1 a ton.

The pig iron market has had another quiet week, but this has not weakened prices. Lack of consumptive buying also is without effect on scrap prices.

**Pig Iron.**—Demand for pig iron continues to come from the small melters, and individual sales rarely exceed 100 tons. It is rather well known that merchant blast furnace operators secured their coke requirements for this quarter at prices ranging from $3.75 to slightly above $4, and the situation created by the ending of the conference of hard coal mine operators and miners without a settlement will hardly have any effect on pig iron producing costs in this quarter. The large consumers are well covered against their requirements for this quarter, and with the prospect of prices remaining at about present levels they are not yet keenly interested in their needs for the second quarter. Furnace yard stocks of iron have been very materially reduced in the past 90 days, and few of the merchant producers have much iron to sell in excess of what they will produce in this quarter. Pressure for business is lacking, and consequently there is a very steady market.

We quote Valley furnace, the freight rate for delivery to the Cleveland or Pittsburgh district being $1.76 per gross ton:

| | |
|---|---|
| Basic | $20.00 |
| Bessemer | 21.00 |
| Gray forge | 20.00 |
| No. 2 foundry | 20.50 |
| No. 3 foundry | 20.00 |
| Malleable | 20.50 |
| Low phosphorus, copper free | $28.00 to 28.60 |

**Ferroalloys.**—Users of ferromanganese show no disposition to abandon their policy of short-term buying. Sales are steady enough, but individually they are small. Recent prices are holding on both domestic and British material, despite the fact that agents of the Tata Iron & Steel Co. are quoting $110, c.i.f. Atlantic seaboard, duty paid, on Indian material guaranteed to run 78 per cent manganese content. Consumers are specifying steadily on contracts for spiegeleisen and 50 per cent ferrosilicon, but new business is light. Prices are given on page 169.

**Semi-Finished Steel.**—There has been a considerable change of attitude toward the market on the part of consumers, and whereas last month they were disposed to supplement protection from regular sources of supply in the fear that there would be some shortage, they now feel that their coverages will be sufficient, and no longer are seeking additional supplies. Makers generally seem to have abandoned the effort to secure higher prices on fill-in tonnages than they obtained on regular quarterly contracts, and only this week one mill took 3600 tons of billets and slabs for shipment in this quarter at $35, Pittsburgh, for the larger sizes, and $36 for small sizes. A recent sale of 3000 tons of open-hearth sheet bars was made at $36, Pittsburgh. It is noted that specifications against some higher-priced business are not being made promptly, and already there is some talk of an adjustment in the prices of the contracts. No success has attended the effort to get more than $45, base Pittsburgh or Cleveland, for wire rods. Skelp is easy to get at 1.90c. Prices are given on page 169.

**Steel and Iron Bars.**—Specifications against orders for steel bars have picked up somewhat, but the market is yet to develop real activity following the recent holiday and inventory lull. The market is still quotable at 2c. to 2.10c. base, Pittsburgh, but the ruling price, except on very small tonnage, is 2c. Better engagement of railroad car building plants of the district is responsible for a more active market in iron bars, but there has been no change in prices. Prices are given on page 167.

**Wire Products.**—Local producers note a good movement of plain wire and some gain in the shipments of the other products, although locally some irregularity in the secondary market in nails is somewhat disturbing to business. Mills deny shading the regular price of $2.65, base per keg, but with some jobbers selling below the usual differential over the mill base there is a tendency to seek the cause in mill prices. There is no question as the price of plain wire. Spring demands are still expected to be heavy and some of the current production is going into stock in mill warehouses. Prices are given on page 167.

**Rails and Track Supplies.**—Orders for spikes and other track accessories are flowing in steadily and no great difficulty is experienced in maintaining prices. Specifications against standard rail contracts are good for the time of year. Light rails find a steady sale and prices appear to be growing stronger. Prices are given on page 167.

**Tubular Goods.**—Oil country jobbers are taking pipe a little more freely, and in view of the steady decline in oil production, the expectation of higher oil prices, which would mean increased drilling and a larger demand for pipe, is stronger. Jobbers also are specifying well in standard pipe. On the whole, the pipe market is in better condition than for several weeks. Production, however, remains rather low, since mill stocks are sufficient to take care of much of the recent increase in specifications. There has been some narrowing of the spread between lapweld and seamless oil well casing prices, but that is the natural result of the effort of domestic makers of seamless pipe to restrict the invasion of the market by foreign producers. Although there is still some irregularity in secondary market prices, mill prices generally are steady. Boiler tubes remain easy, especially lapweld steel tubes, on which some makers are understood to have taken first quarter contracts at 7 fives beyond the card. Discounts are given on page 167.

**Tin Plate.**—Although the season of heaviest consumption is still several months off, there is sufficient business to give a high rate of engagement to the usable productive capacity. About 85 per cent of the mills thus rated are in operation. Most of the large container manufacturers are covered against their requirements for the first half of the year, but a number of the smaller ones continue to buy for their needs as they develop. Since full specifications by contract buyers will not leave much surplus supply, there is a possibility of a higher spot market during the height of the canning season.

**Cold Finished Steel Bars and Shafting.**—Some producers feel that prices are too low, but more recognize that business is flowing in steadily at the present market and that an advance at this time might create resistance rather than stimulate larger purchases. Consequently, while the spread between hot and cold bars is generally regarded as too small, it appears that a steady demand is preferred to higher prices and that 2.50c., base Pittsburgh, will be continued on ordinary tonnages.

**Bolts, Nuts and Rivets.**—Makers of bolts are still having a very steady business and the prices established more than a year ago are well maintained. The situation in rivets is better than during the middle of last year, but consumers still are working on low-priced supplies. The effort fully to establish large rivets at $2.60, base per 100 lb., Pittsburgh, is also difficult because a few makers continue to take business at less. Prices and discounts are given on page 169.

**Structural Steel.**—The mills are getting somewhat heavier orders than recently, and a feature of the demand is that in almost all cases it calls for early delivery. This district has provided another good ton-

# Prices of Finished Iron and Steel Products (Carload Lots)

## Iron and Steel Bars

*Soft Steel*

| | Base Per Lb. |
|---|---|
| F.o.b. P'gh mills | 2.00c. to 2.10c. |
| F.o.b. Chicago | 2.10c. |
| Del'd Philadelphia | 2.32c. to 2.42c. |
| Del'd New York | 2.34c. to 2.44c. |
| Del'd Cleveland | 2.19c. |
| F.o.b. Birmingham | 2.15c. to 2.25c. |
| C.i.f. Pacific ports | 2.30c. to 2.35c. |
| F.o.b. San Francisco mills | 2.35c. to 2.40c. |

*Billet Steel Reinforcing*

| | |
|---|---|
| F.o.b. Pittsburgh mills | 2.00c. to 2.10c. |

*Rail Steel*

| | |
|---|---|
| F.o.b. mill | 1.80c. to 1.90c. |
| F.o.b. Chicago | 2.00c. to 2.05c. |

*Iron*

| | |
|---|---|
| Common iron, f.o.b. Chicago | 2.00c. |
| Refined iron, f.o.b. P'gh mills | 3.00c. |
| Common iron, del'd Phila'phia | 2.22c. |
| Common iron, del'd New York | 2.24c. |

## Tank Plates

| | Base Per Lb. |
|---|---|
| F.o.b. Pittsburgh mill | 1.90c. to 2.00c. |
| F.o.b. Chicago | 2.10c. |
| F.o.b. Birmingham | 2.05c. to 2.15c. |
| Del'd Cleveland | 1.99c. to 2.09c. |
| Del'd Philadelphia | 2.07c. to 2.12c. |
| Del'd New York | 2.09c. to 2.14c. |
| C.i.f. Pacific ports | 2.30c. to 2.35c. |

## Structural Shapes

| | Base Per Lb. |
|---|---|
| F.o.b. Pittsburgh mill | 1.90c. to 2.10c. |
| F.o.b. Chicago | 2.10c. |
| F.o.b. Birmingham | 2.05c. to 2.15c. |
| Del'd Cleveland | 2.09c. to 2.19c. |
| Del'd Philadelphia | 2.22c. to 2.32c. |
| Del'd New York | 2.24c. to 2.34c. |
| C.i.f. Pacific ports | 2.35c. to 2.40c. |

## Hot-Rolled Flats (Hoops, Bands and Strips)

| | Base Per Lb. |
|---|---|
| All gages, narrower than 6 in., P'gh | 2.50c. |
| All gages, 6 in. and wider, P'gh | 2.30c. |
| All gages, 6 in. and narrower, Chicago | 2.60c. |
| All gages, wider than 6 in., Chicago | 2.50c. |

## Cold-Finished Steel

| | Base Per Lb. |
|---|---|
| Bars, f.o.b. P'gh mills | 2.50c. |
| Bars, f.o.b. Chicago | 2.50c. |
| Bars, Cleveland | 2.55c. |
| Shafting, ground, f.o.b. mill | *2.70c. to 3.00c. |
| Strips, f.o.b. P'gh mills | 3.90c. |
| Strips, f.o.b. Cleveland mills | 3.90c. |
| Strips, delivered Chicago | 4.20c. |
| Strips, f.o.b. Worcester mills | 4.05c. |

*According to size.

## Wire Products

(To jobbers in car lots f.o.b. Pittsburgh and Cleveland)

| | Base Per Keg |
|---|---|
| Wire nails | $2.65 |
| Galv'd nails, 1-in. and longer | 4.65 |
| Galv'd nails, shorter than 1 in. | 4.90 |
| Galv'd staples | 3.35 |
| Polished staples | 3.10 |
| Cement coated nails, base, per count keg | 1.85 |

| | Base Per 100 Lb. |
|---|---|
| Bright plain wire, No. 9 gage | $2.50 |
| Annealed fence wire | 2.65 |
| Spring wire | 3.50 |
| Galv'd wire, No. 9 | 3.10 |
| Barbed wire, galv'd | 3.35 |
| Barbed wire, painted | 3.10 |

Chicago district mill and delivered Chicago prices are $1 per ton above the foregoing. Birmingham mill prices $3 a ton higher; Worcester, Mass., mill $3 a ton higher on production of that plant, and Duluth, Minn., mill $2 a ton higher; Anderson, Ind., $1 higher.

*Woven Wire Fence*

| | Base to Retailers Per Net Ton |
|---|---|
| F.o.b. Pittsburgh | $65.00 |
| F.o.b. Cleveland | 65.00 |
| F.o.b. Anderson, Ind. | 66.00 |
| F.o.b. Chicago district mills | 67.00 |
| F.o.b. Duluth | 68.00 |
| F.o.b. Birmingham | 68.00 |

## Sheets

*Blue Annealed*

| | Base Per Lb. |
|---|---|
| Nos. 9 and 10, f.o.b. Pittsburgh | 2.50c. |
| Nos. 9 and 10, f.o.b. Ch'go dist. mills | 2.60c. |
| Nos. 9 and 10, del'd Phila'phia | 2.72c. to 2.82c. |

*Box Annealed, One Pass Cold Rolled*

| | |
|---|---|
| No. 28, f.o.b. Pittsburgh | 3.35c. |
| No. 28, f.o.b. Ch'go dist. mill | 3.45c. |
| No. 28, del'd Phila'phia | 3.57c. to 3.67c. |

*Galvanized*

| | |
|---|---|
| No. 28, f.o.b. Pittsburgh | 4.60c. |
| No. 28, f.o.b. Chicago dist. mill | 4.70c. |
| No. 28, del'd Phila'phia | 4.82c. to 4.92c. |

*Tin Mill Black Plate*

| | |
|---|---|
| No. 28, f.o.b. Pittsburgh | 3.35c. |
| No. 28, f.o.b. Chicago dist. mill | 3.45c. |

*Automobile Body Sheets*

| | |
|---|---|
| No. 22, f.o.b. Pittsburgh | 4.50c. |

*Long Ternes*

| | |
|---|---|
| No. 28, 8-lb. coating, f.o.b. mill | 4.85c. |

## Tin Plate

| | Per Base Box |
|---|---|
| Standard cokes, f.o.b. P'gh district mills | $5.50 |
| Standard cokes, f.o.b. Gary and Elwood, Ind. | 5.60 |

## Terne Plate

(*F.o.b. Morgantown or Pittsburgh*)

(Per package, 20 x 28 in.)

| | |
|---|---|
| 8-lb. coating, 100 lb. base | $11.40 |
| 8-lb. coating I.C. | 11.70 |
| 15-lb. coating I.C. | 14.85 |
| 20-lb. coating I.C. | $16.20 |
| 25-lb. coating I.C. | 17.90 |
| 30-lb. coating I.C. | 19.45 |
| 40-lb. coating I.C. | 21.65 |

## Alloy Steel Bars

(F.o.b. Pittsburgh or Chicago)

| S. A. E. Series Numbers | | Base Per 100 Lb. |
|---|---|---|
| 2100* | (1½% Nickel, 0.10% to 0.20% Carbon) | $3.25 to $3.30 |
| 2300 | (3½% Nickel) | 4.60 to 4.70 |
| 2500 | (5% Nickel) | 5.80 to 5.90 |
| 3100 | (Nickel Chromium) | 3.60 to 3.70 |
| 3200 | (Nickel Chromium) | 5.25 to 5.35 |
| 3300 | (Nickel Chromium) | 7.25 to 7.35 |
| 3400 | (Nickel Chromium) | 6.50 to 6.60 |
| 5100 | (Chromium Steel) | 3.60 |
| 5200* | (Chromium Steel) | 7.50 to 8.25 |
| 6100 | (Chrom. Vanadium bars) | 4.30 to 4.40 |
| 6100 | (Chrom. Vanad. spring steel) | 3.85 |
| 9250 | (Silicon Manganese spring steel) | 3.25 to 3.30 |
| | Carbon Vanadium (0.45% to 0.55% Carbon, 0.15% Vanad.) | 4.20 to 4.45 |
| | Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chrom., 0.15 Vanad.) | 4.55 to 4.65 |
| | Chromium Molybdenum bars (0.80—1.10 Chrom., 0.25—0.40 Molyb.) | 4.35 to 4.45 |
| | Chromium Molybdenum bars (0.50—0.70 Chrom., 0.15—0.25 Molyb.) | 3.50 to 3.60 |
| | Chromium Molybdenum spring steel (1 — 1.25 Chrom., 0.30 — 0.50 Molyb.) | 4.75 to 5.00 |

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for cold-drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10 in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4 in. down to and including 2½-in. squares, the price is $5 a gross ton above the 4 x 4 billet price.

*Not S. A. E. specifications, but numbered by manufacturers to conform to S. A. E. system.

## Rails

| | Per Gross Ton |
|---|---|
| Standard, f.o.b. mill | $43.00 |
| Light (from billets), f.o.b. mill | $36.00 to 37.00 |
| Light (from rail steel), f.o.b. mill | 34.00 to 35.00 |
| Light (from billets), f.o.b. Ch'go mill | 38.00 |

## Track Equipment

(F.o.b. Mill)

| | Base Per 100 Lb. |
|---|---|
| Spikes, ⅜ in. and larger | $2.80 to $3.10 |
| Spikes, ½ in. and smaller | 3.00 to 3.50 |
| Spikes, boat and barge | 3.25 |
| Track bolts, all sizes | 3.90 to 4.25 |
| Tie plates, steel | 2.35 to 2.50 |
| Angle bars | 2.75 |

## Welded Pipe

**Base Discounts f.o.b. Pittsburgh District and Lorain, Ohio, Mills**

*Butt Weld*

| Steel Inches | Black | Galv. | Iron Inches | Black | Galv. |
|---|---|---|---|---|---|
| ⅛ | 45 | 19½ | ¼ to ⅜ | +11 | +39 |
| ¼ to ⅜ | 51 | 25½ | ½ | 22 | 3 |
| ½ | 56 | 42½ | ¾ | 25 | 11 |
| ¾ | 60 | 48½ | 1 to 1½ | 30 | 13 |
| 1 to 3 | 62 | 50½ | | | |

*Lap Weld*

| | | | | | |
|---|---|---|---|---|---|
| 2 | 55 | 43½ | 2 | 23 | 7 |
| 2½ to 6 | 59 | 47½ | 2½ | 26 | 11 |
| 7 and 8 | 56 | 43½ | 3 to 6 | 25 | 13 |
| 9 and 10 | 54 | 41½ | 7 to 12 | 26 | 11 |
| 11 and 12 | 53 | 40½ | | | |

*Butt Weld, extra strong, plain ends*

| | | | | | |
|---|---|---|---|---|---|
| ⅛ | 41 | 24½ | 2 to 3 | 61 | 50½ |
| ¼ to ⅜ | 47 | 30½ | ¼ to ⅜ | +11 | +54 |
| ½ | 53 | 42½ | ½ | 21 | 7 |
| ¾ | 58 | 47½ | ¾ | 28 | 13 |
| 1 to 1½ | 60 | 49½ | 1 to 1½ | 30 | 14 |

*Lap Weld, extra strong, plain ends*

| | | | | | |
|---|---|---|---|---|---|
| 2 | 53 | 42½ | 2 | 23 | 9 |
| 2½ to 4 | 57 | 46½ | 2½ to 4 | 29 | 15 |
| 4½ to 6 | 56 | 45½ | 4½ to 6 | 28 | 14 |
| 7 to 8 | 52 | 39½ | 7 to 8 | 21 | 7 |
| 9 and 10 | 45 | 32½ | 9 to 12 | 16 | 2 |
| 11 and 12 | 44 | 31½ | | | |

To the large jobbing trade the above discounts on steel pipe are increased (on black) by one point, with supplementary discount of 5% and (on galvanized) by 1½ point, with supplementary discount of 5%. On iron pipe, both black and galvanized, the preferentials to large jobbers are 1, 5 and 2½% beyond the above discount.

Note.—Chicago district mills have a base two points less than the above discounts. Chicago delivered base 2½ points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

## Boiler Tubes

**Base Discounts f.o.b. Pittsburgh**

| *Lap Welded Steel* | | *Charcoal Iron* | |
|---|---|---|---|
| 2 to 2¼ in. | 27 | 1½ in. | +18 |
| 2½ to 2¾ in. | 37 | 1⅝ to 1⅞ in. | + 8 |
| 3 in. | 40 | 2 to 2½ in. | — 2 |
| 3¼ to 3¾ in. | 42½ | 2½ to 3 in. | — 7 |
| 4 to 13 in. | 46 | 3¼ to 4½ in. | — 9 |

Beyond the above discounts, 5 to 7 fives extra are given on lap welded steel tubes and 3 to 5 tens on charcoal iron tubes.

*Standard Commercial Seamless Boiler Tubes*

*Cold Drawn*

| | | | |
|---|---|---|---|
| 1 in. | 60 | 3 in. | 45 |
| 1¼ to 1½ in. | 52 | 3¼ to 3½ in. | 47 |
| 1⅝ in. | 36 | 4 in. | 50 |
| 2 to 2¼ in. | 31 | 4½, 5 and 6 in. | 45 |
| 2½ to 2¾ in. | 39 | | |

*Hot Rolled*

| | | | |
|---|---|---|---|
| 2 and 2¼ in. | 34 | 3¼ and 3½ in. | 50 |
| 2½ and 2¾ in. | 42 | 4 in. | 53 |
| 3 in. | 48 | 4½, 5 and 6 in. | 43 |

Less carloads, 4 points less. Add $3 per net ton for more than four gages heavier than standard. No extra for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be held at mechanical tube list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

*Seamless Mechanical Tubing (New List)*

| | Per Cent off List |
|---|---|
| Carbon, 0.10% to 0.30%, base | 50 to 55 |
| Carbon, 0.30% to 0.40%, base | 45 to 50 |

Plus differentials for lengths over 18 ft. and for commercially exact lengths. Warehouse discounts on small lots are less than the above.

nage in the blast furnace for the Weirton Steel Co., Weirton, W. Va. Besides that award, there were others aggregating about 1000 tons. The ruling price on large structural shapes is still 1.90c., Pittsburgh.

**Plates.**—It is difficult for mills in this district to make sales at above 1.90c., base Pittsburgh, although there is a quotation of 2c. on small lots. On the other hand, Mahoning and Shenango Valley fabricators are able to buy plates without much difficulty at 1.85c., Pittsburgh. Barge contracts recently placed involve more than 6500 tons of steel, chiefly plates, and a number of orders are pending. Meanwhile, the railroad car builders are busy and taking liberal tonnages of plates. Prices are given on page 167.

**Sheets.**—This market has not yet fully emerged from the lull in business incident to the holidays and the inventory period, and while this week has produced a fair amount of new business, the market is not really active. Much of the first quarter business is yet to be specified and in view of the plans of the automobile industry for a very large increase in output as compared with last year, manufacturers are hopeful. The bulk of current shipments are against orders placed prior to the establishment of present prices, and the test of these prices is ahead. There is no anxiety for business on the part of the great majority of makers, however, and observance of quotations is as general as it ever is. Prices are given on page 167.

**Hot-Rolled Flats.**—Orders are somewhat heavier than recently, but at the same time no tax upon the capacity of the mills. With the automobile manufacturers showing their new models, production still is moderate and also the consumption of steel. Prices, which are well maintained, are given on page 167.

**Cold-Rolled Strips.**—Incoming business is increasing, but real activity seems to await what the New York automobile show indicates as to the years' requirements in motor vehicles. Makers are not taxed in supplying present demands. The price is holding well at 3.90c., base Pittsburgh.

**Old Material.**—The market has stiffened on turnings, but shows no other important price changes. Dealers are short about 25,000 tons of heavy melting steel, but consumers are not pressing for deliveries and general demand is still light. If there were fresh buying of any consequence, the short covering might mean a rather sharp price advance. The Norfolk & Western January list contains 6640 gross tons of scrap.

We quote for delivery to consumer's mill in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

| *Per Gross Ton* | |
|---|---|
| Heavy melting steel | $19.00 to $19.50 |
| No. 1 cast, cupola size | 17.50 to 18.00 |
| Rails for rolling, Newark and Cambridge, Ohio; Cumberland, Md.; Huntington, W. Va., and Franklin, Pa. | 20.50 to 21.50 |
| Compressed sheet steel | 18.00 |
| Bundled sheets, sides and ends | 17.00 |
| Railroad knuckles and couplers | 21.50 to 22.00 |
| Railroad coil and leaf springs | 21.50 to 22.00 |
| Low phosphorus blooms and billet ends | 24.00 to 24.50 |
| Low phosphorus plates and other material | 23.00 to 23.50 |
| Low phosphorus punchings | 21.00 to 21.50 |
| Railroad malleable | 19.50 to 20.00 |
| Steel car axles | 23.00 to 23.50 |
| Cast iron wheels | 18.50 to 19.00 |
| Rolled steel wheels | 22.00 to 22.50 |
| Machine shop turnings | 14.75 to 15.25 |
| Short shoveling turnings | 15.00 to 15.50 |
| Sheet bar crops | 20.50 to 21.50 |
| Heavy steel axle turnings | 17.00 to 17.50 |
| Short mixed borings and turnings | 15.00 to 15.50 |
| Heavy breakable cast | 17.00 to 17.50 |
| Stove plate | 14.50 to 15.00 |
| Cast iron borings | 15.00 to 15.50 |
| No. 1 railroad wrought | 15.00 to 15.50 |
| No. 2 railroad wrought | 19.00 to 19.50 |

**Coke and Coal.**—Pig iron producers who might happen to need coke just now would have to pay high prices to get it. Most of them, however, are covered by contracts, and there is only a limited market for blast furnace coke. Producers, however, on account of cold weather in the East and the failure of the hard coal conference to reach an agreement, are finding a very good market for 48-hr. coke for domestic use. As they are able to get from $8 to $9 for the yard crushed and even more for coke crushed mechanically, they are not dependent upon the blast furnaces for an outlet for production beyond their contract obligations. The spot furnace coke market is now quotable at $6 to $6.50 per net ton at ovens, an advance of $1.25 a ton over the prices of a week ago, and spot foundry coke also has stiffened sharply because of the more remunerative market in domestic sizes. The range is wide on foundry coke because producers are not disposed to demand all the traffic will bear from regular customers. The soft coal market has not profited by the Eastern shortage of hard coal; there is a big supply and prices are easy. Prices are given on page 169.

## Carnegie Steel Co. Holds Annual Sales Conference

The twenty-ninth annual conference of the sales and operating officials of the Carnegie Steel Co. was concluded with a banquet at the Duquesne Club, Pittsburgh, Saturday evening, Jan. 9. William G. Clyde, new president of the company was toastmaster and made a brief address in which he stressed the need of enthusiasm as a means to business success.

Lawrence E. Riddle, superintendent of the City Furnaces, gave a highly interesting talk on "Manganese from Mine to Mill." Louis C. Bihler, traffic manager, talked on "Railroads and Automobile Transportation," noting the growth of the use of trucks in the movement of materials and of buses in passenger transportation and how the various railroad managements regarded this competition. "River Transportation and the Southwest," was the subject of Dennis Crowley, New Orleans district sales manager. He noted the revival of river transportation and indicated future possibilities in the use of the inland waterways in moving steel and the importance to Pittsburgh of this mode of shipment in bringing delivered costs down sufficiently to meet the competition of foreign steel as well as domestic material delivered by ocean-going boats.

Judge James H. Reed, a director of the company as well as president of its subsidiary railroads, also was a speaker, and James A. Farrell, president of the Steel Corporation, who was a guest, also spoke briefly. Another guest was John Reis, vice-president of the Steel Corporation.

## Midland Coke & Iron Co. Moves Headquarters to Chicago

The general offices of the Midland Coke & Iron Co., formerly the St. Louis Coke & Iron Co., have been removed from Granite City, Ill., to Chicago. The company's general sales, raw materials and traffic departments have been removed from St. Louis to Chicago. The personnel of the Chicago office follows: Leonard A. Busby, chairman of the board; W. G. Maguire, president; A. J. Mann, treasurer; P. B. Nelson, secretary; Walter H. Underwood, general sales manager; W. G. Strom, traffic manager, and F. R. Johnson, manager raw materials department.

At Granite City, F. D. Curran, vice-president and general manager, will be in charge of the plant, with George F. Vosberg, general superintendent, and William Sloss, assistant superintendent. At St. Louis a sales office will be maintained in the Planters Building, in charge of Edward Gross, district representative, and Charles J. Scullin. The branch office at Davenport, Ia., has been discontinued.

## Shop Truck Companies Consolidate

The Stuebing Truck Co., Cincinnati, and the Cowan Truck Co., Holyoke, Mass., both manufacturers of lift trucks and platforms, have been consolidated as the Stuebing-Cowan Co. The directing headquarters will be at Cincinnati but the Cowan division will continue its operations at Holyoke. Walter Steubing, Cincinnati, is president.

# Semi-Finished Steel, Raw Materials, Bolts and Rivets

## Semi-Finished Steel

**F.o.b. Pittsburgh or Youngstown**

### Billets and Blooms

| | *Per Gross Ton* |
|---|---|
| Rolling, 4-in. and over | $35.00 |
| Rolling, 2-in. and smaller | 36.00 |
| Forging, ordinary | 40.00 |
| Forging, guaranteed | 45.00 |

### Sheet Bars

| | *Per Gross Ton* |
|---|---|
| Open-hearth or Bessemer | $36.00 |

### Slabs

| | *Per Gross Ton* |
|---|---|
| 8 in. x 2 in. and larger | $35.00 |
| 6 in. x 2 in. and smaller | 36.00 |

### Skelp

| | *Per Lb.* |
|---|---|
| Grooved | 1.90c. |
| Sheared | 1.90c. |
| Universal | 1.90c. |

### Wire Rods

| | *Per Gross Ton* |
|---|---|
| *Common soft, base, No. 5 to ⅜-in. | $45.00 |
| Common soft, coarser than ¾-in. | $2.50 over base |
| Screw stock | $5.00 per ton over base |
| Carbon 0.20% to 0.40% | 3.00 per ton over base |
| Carbon 0.41% to 0.55% | 5.00 per ton over base |
| Carbon 0.56% to 0.75% | 7.50 per ton over base |
| Carbon over 0.75% | 10.00 per ton over base |
| Acid | 15.00 per ton over base |

*Chicago mill base is $46. Cleveland mill base, $45.

## Raw Materials

### Ores

*Lake Superior Ores, Delivered Lower Lake Ports*

| | *Per Gross Ton* |
|---|---|
| Old range Bessemer, 51.50% iron | $4.55 |
| Old range non-Bessemer, 51.50% iron | 4.40 |
| Mesaba Bessemer, 51.50% iron | 4.40 |
| Mesaba non-Bessemer, 51.50% iron | 4.25 |
| High phosphorus, 51.50% iron | 4.15 |

*Foreign Ore, c.i.f. Philadelphia or Baltimore*

| | *Per Unit* |
|---|---|
| Iron ore, low phos., copper free, 55 to 58% iron in dry Spanish or Algerian | 9.50c. to 10c. |
| Iron ore, Swedish, average 66% iron | 9.50c. |
| Manganese ore, washed, 51% manganese, from the Caucasus | 45c. |
| Manganese ore, Brazilian or Indian, nominal | 42c. |
| Tungsten ore, high grade, per unit, in 60% concentrates | $12.00 to $13.00 |

| | *Per Ton* |
|---|---|
| Chrome ore, Indian basic, 48% $Cr_2O_3$, crude, c.i.f. Atlantic seaboard | $22.50 to $24.00 |

| | *Per Lb.* |
|---|---|
| Molybdenum ore, 85% concentrates of $MoS_2$, New York | 65c. to 70c. |

### Coke

| | *Per Net Ton* |
|---|---|
| Furnace, f.o.b. Connellsville prompt | $6.00 to $6.50 |
| Foundry, f.o.b. Connellsville prompt | 6.50 to 7.50 |
| Foundry, by-product, Ch'go ovens | 10.50 |
| Foundry, by-product, New England, del'd | 13.00 |
| Foundry, by-product, Newark or Jersey City, del'd | 11.52 |
| Foundry, Birmingham | 5.75 |
| Foundry, by-product, St. Louis or Granite City | 10.00 |

### Coal

| | *Per Net Ton* |
|---|---|
| Mine run steam coal, f.o.b. W. Pa. mines | $1.50 to $2.10 |
| Mine run coking coal, f.o.b. W. Pa. mines | 1.90 to 2.25 |
| Mine run gas coal, f.o.b. W. Pa. mines | 2.00 to 2.25 |
| Steam slack, f.o.b. W. Pa. mines | 1.40 to 1.50 |
| Gas slack, f.o.b. W. Pa. mines | 1.50 to 1.60 |

### Ferromanganese

| | *Per Gross Ton* |
|---|---|
| Domestic, 80%, furnace or seab'd | $115.00 |
| Foreign, 80%, Atlantic or Gulf port, duty paid | 115.00 |

### Spiegeleisen

| | *Per Gross Ton Furnace* |
|---|---|
| Domestic, 19 to 21% | $32.00 to $34.00 |
| Domestic, 16 to 19% | 31.00 to 33.00 |

### Electric Ferrosilicon

| | *Per Gross Ton Delivered* |
|---|---|
| 50% | $85.00 |
| 75% | 145.00 |

| | *Per Gross Ton Furnace* | | *Per Gross Ton Furnace* |
|---|---|---|---|
| 10% | $42.00 | 12% | $42.00 |
| 11% | 42.00 | 14 to 16% | $45 to 46.00 |

### Bessemer Ferrosilicon

**F.o.b. Jackson County, Ohio, Furnace**

| | *Per Gross Ton* | | *Per Gross Ton* |
|---|---|---|---|
| 10% | $36.00 | 12% | $40.00 |
| 11% | 38.00 | | |

### Silvery Iron

**F.o.b. Jackson County, Ohio, Furnace**

| | *Per Gross Ton* | | *Per Gross Ton* |
|---|---|---|---|
| 6% | $28.50 | 10% | $34.00 |
| 7% | 29.50 | 11% | 36.00 |
| 8% | 30.50 | 12% | 38.00 |
| 9% | 32.00 | | |

### Other Ferroalloys

| | |
|---|---|
| Ferrotungsten, per lb. contained metal, del'd | $1.15 to $1.20 |
| Ferrochromium, 4% carbon and up, 60 to 70% Cr., per lb. contained Cr. delivered | 11.50c. |
| Ferrovanadium, per lb. contained vanadium, f.o.b. furnace | $3.25 to $4.00 |
| Ferrocarbontitanium, 15 to 18%, per net ton, f.o.b. furnace, in carloads | $200.00 |
| Ferrophosphorus, electrolytic, or blast furnace material, in carloads, 18%, Rockdale, Tenn., base, per net ton | $91.00 |
| Ferrophosphorus, electrolytic, 24%, f.o.b. Anniston, Ala., per net ton | $122.50 |

### Fluxes and Refractories

**Fluorspar**

| | *Per Net Ton* |
|---|---|
| Domestic 85% and over calcium fluoride, not over 5% silica, gravel, f.o.b. Illinois and Kentucky mines | $17.50 |
| No. 2 lump, Illinois and Kentucky mines | $20.00 |
| Foreign, 85% calcium fluoride, not over 5% silica, c.i.f. Atlantic port, duty paid, | $17.00 to $17.50 |
| Domestic, No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2½% silica, f.o.b. Illinois and Kentucky mines | $32.50 |

**Fire Clay**

| | *Per 1000 f.o.b. Works* High Duty | Moderate Duty |
|---|---|---|
| Pennsylvania | $43.00 to $46.00 | $40.00 to $43.00 |
| Maryland | 48.00 to 50.00 | 43.00 to 45.00 |
| Ohio | 43.00 to 46.00 | 40.00 to 43.00 |
| Kentucky | 43.00 to 45.00 | 40.00 to 43.00 |
| Illinois | 43.00 to 45.00 | 40.00 to 43.00 |
| Missouri | 40.00 to 43.00 | 35.00 to 38.00 |
| Ground fire clay, per ton | 6.50 to 7.50 | |

**Silica Brick**

| | *Per 1000 f.o.b. Works* |
|---|---|
| Pennsylvania | $40.00 |
| Chicago | 49.00 |
| Birmingham | 54.00 |
| Silica clay, per ton | $8.00 to 9.00 |

**Magnesite Brick**

| | *Per Net Ton* |
|---|---|
| Standard size, f.o.b. Baltimore and Chester, Pa. | $65.00 |
| Grain magnesite, f.o.b. Baltimore and Chester, Pa. | 40.00 |

**Chrome Brick**

| | *Per Net Ton* |
|---|---|
| Standard size | $48.00 |

## Bolts, Nuts, Rivets and Set Screws

### Bolts and Nuts

(F.o.b. Pittsburgh, Cleveland, Birmingham and Chicago)

| | *Per Cent Off List* |
|---|---|
| Machine bolts, small, rolled threads | 60 and 10 |
| Machine bolts, all sizes, cut threads | 50, 10 and 10 |
| Carriage bolts, smaller and shorter, rolled threads | 50, 10 and 10 |
| Carriage bolts, cut threads, all sizes | 50 and 10 |
| Eagle carriage bolts | 65 and 10 |
| Lag bolts | 60, 10 and 10 |
| Plow bolts, Nos. 3 and 7 heads | 50 and 10 |
| (Extra of 20% for other style heads) | |
| Machine bolts, c.p.c. and t. nuts, ⅜ x 4 in., | 45, 10 and 5 |
| Larger and longer sizes | 45, 10 and 5 |
| Bolt ends with hot-pressed nuts | 50, 10 and 10 |
| Bolt ends with cold-pressed nuts | 45, 10 and 5 |
| Hot-pressed nuts, blank and tapped, square, | 4c. off list |
| Hot-pressed nuts, blank or tapped, hexagons, | 4.40c. off list |
| C.p.c. and t. square or hex. nuts, blank or tapped | 4.10c. off list |
| Washers* | 6.50c. to 6.25c. off list |

*F.o.b. Chicago and Pittsburgh.

The discount on machine, carriage and lag bolts is 5 per cent less than above for less than car lots. On hot-pressed and cold-punched nuts the discount is 25c. less per 100 lb. than quoted above for less than car lots.

### Bolts and Nuts

(Quoted with actual freight allowed up to but not exceeding 50c. per 100 lb.)

| | *Per Cent Off List* |
|---|---|
| Semi-finished hexagon nuts: | |
| ⅞ in. and smaller, U. S. S. | 80, 10 and 5 |
| ⅞ in. and larger, U. S. S. | 75, 10 and 5 |
| Small sizes, S. A. E. | 80, 10, 10 and 5 |
| S. A. E., ⅝ in. and larger | 75, 10, 10 and 5 |
| Stove bolts in packages | 80, 10 and 5 |
| Stove bolts in bulk | 80, 10, 5 and 2½ |
| Tire bolts | 60 and 5 |

### Semi-Finished Castellated and Slotted Nuts

(Actual freight allowed up to but not exceeding 50c. per 100 lb.)

(To jobbers and consumers in large quantities)

| | Per 100 Net S.A.E. | U.S.S. | | Per 100 Net S.A.E. | U.S.S. |
|---|---|---|---|---|---|
| ¼-in. | $0.44 | $0.44 | ⅝-in. | $2.35 | $2.40 |
| 5/16-in. | 0.515 | 0.515 | ⅞-in. | 3.60 | 3.60 |
| ⅜-in. | 0.62 | 0.66 | 1-in. | 5.65 | 5.80 |
| 7/16-in. | 0.79 | 0.90 | 1⅛-in. | 8.90 | 8.90 |
| ½-in. | 1.01 | 1.05 | 1¼-in. | 12.60 | 13.10 |
| 9/16-in. | 1.35 | 1.42 | 1⅜-in. | 18.35 | 18.35 |
| ⅝-in. | 1.70 | 1.73 | 1½-in. | 21.00 | 21.00 |

Larger sizes.—Prices on application.

### Large Rivets

| | *Base Per 100 Lb.* |
|---|---|
| F.o.b. Pittsburgh | $2.60 |
| F.o.b. Cleveland | 2.70 |
| F.o.b. Chicago | 2.75 |

### Small Rivets

| | *Per Cent Off List* |
|---|---|
| F.o.b. Pittsburgh | 70 and 10 |
| F.o.b. Cleveland | 70 and 10 |
| F.o.b. Chicago | 70, 10 and 5 to 70 and 10 |

### Cap and Set Screws

(Freight allowed up to but not exceeding 50c. per 100 lb.)

| | *Per Cent Off List* |
|---|---|
| Milled cap screws | 80 and 10 |
| Milled standard set screws, case hardened | 80 |
| Milled headless set screws, cut thread | 80 |
| Upset hex. head cap screws, U. S. S. thread, | 80, 10 and 10 |
| Upset hex. cap screws, S. A. E. thread, | 80 and 10 |
| Upset set screws | 80, 10 and 10 to 80, 10 and 20 |
| Milled studs | 70 and 5 |

# Chicago

## Union Pacific Buys Cars — Large Track Fastening Orders

CHICAGO, Jan. 12.—Steel works blast furnace operations have been expanded by the blowing in of another Steel Corporation stack at Gary, making the count of active stacks 11 at Gary, six at South Chicago and one at Joliet, or 18 out of 27 in the district. The Inland Steel Co. is blowing three furnaces, the Wisconsin Steel Co. has three stacks in blast, and both furnaces of the Youngstown Sheet & Tube Co. are active, making a total of 26 steel works stacks in operation out of 35 in the district. The rate of ingot production is unchanged with the leading producer at 88 per cent and the foremost independent between 80 and 85 per cent. Wire mill operations are being gradually expanded in an effort to round out broken stocks. The week has brought forth some attractive track accessory business, amounting in all to not less than 25,000 tons. The fall rail buying program is practically completed, the only outstanding inquiry still before the trade being that of the Southern Pacific for 100,000 tons. Both sales and specifications for all finished steel products are well maintained, and makers report that specifying by automobile manufacturers is more liberal following a recession during the inventory period.

The outstanding Western railroad equipment order of the week was that of the Union Pacific for passenger coaches and baggage and freight cars. Car builders expect four major railroads to enter the market soon for not less than 11,000 cars. Approximately 45,000 cars are yet to be delivered on contracts closed since Sept. 1.

**Pig Iron.**—Shipments of Northern iron are moving forward at a substantial rate and indications are that they are running slightly ahead of the average maintained throughout December. Furnace stocks, which are reported as still low, are better balanced than was the case just prior to the inventory and holiday period. The week has brought out some inquiry for second quarter requirements. Spot purchases are becoming more numerous, and it is evident that a number of users were either not fully covered for the quarter or their melt has been running ahead of expectations. Northern No. 2 foundry is firm at $23, furnace, and quotations for both first and second quarters are being made at that figure. A Chicago user has taken 500 tons of malleable at $23. A Chicago district melter has inquired for 1000 tons of Northern iron for first quarter delivery, and another is interested in 2500 tons for second quarter delivery. Charcoal iron is quiet, with only occasional carlot sales reported at $29.04, delivered. Silvery has been slightly more active, and quotations are being made at $30.50, Jackson, for the 8 per cent grade.

Quotations on Northern foundry, high phosphorus and malleable iron are f.o.b. local furnace, and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards.

| | |
|---|---|
| Northern No. 2 foundry, sil. 1.75 to 2.25 | $23.00 |
| Northern No. 1 foundry, sil. 2.25 to 2.75 | 23.50 |
| Malleable, not over 2.25 sil. | 23.00 |
| High phosphorus | 23.00 |
| Lake Superior charcoal, averaging sil. 1.50, delivered at Chicago | 29.04 |
| Southern No. 2 (all rail) | 27.01 |
| Southern No. 2 (barge and rail) | 26.18 |
| Low phos., sil. 1 to 2 per cent, copper free | $31.20 to 31.70 |
| Silvery, sil. 8 per cent | 35.29 |
| Ferrosilicon, 14 to 16 per cent | 45.25 to 45.75 |

**Plates.**—Seventy-five thousand tons of plates, shapes and bars will be required for car inquiries issued by the Pacific Fruit Express, the Burlington and the Chicago & Eastern Illinois. Other Western railroads that are preparing car programs are the Southern Pacific, the Rock Island, the Illinois Central, the Chicago & North Western and, according to some reports, the Chicago, Milwaukee & St. Paul. The outstanding order of the week was 2000 miscellaneous freight cars and 47 passenger and baggage cars by the Union Pacific. The Burlington is undertaking the construction of 25 suburban coaches in its own shops, these being in addition to the 1000 freight cars which it is rebuilding at Aurora and Galesburg. About 15,000 tons of oil storage tankage is on inquiry. On the other hand, there is very little activity in water tanks and gas holders. The Chicago mill quotation of 2.10c. is firm, and deliveries on small sizes of plates are said to range from six to eight weeks; on larger sizes not better than 60 days can be done.

The mill quotation is 2.10c., Chicago. Jobbers quote 3.10c. for plates out of stock.

**Ferroalloys.**—Fifty per cent ferrosilicon is quiet, since most users have contracted for their requirements at $85, delivered. Several sales of carload lots of ferromanganese are reported at $115, seaboard, or $122.76, delivered. Spiegeleisen is firm at $34, furnace, or $41.76, delivered.

We quote 80 per cent ferromanganese, $122.56, delivered Chicago; 50 per cent ferrosilicon, $85, delivered; spiegeleisen, 18 to 22 per cent, $41.76, delivered Chicago.

**Bars.**—Deliveries on certain sizes of soft steel bars are said to have advanced to six to eight weeks, and the average for all sizes is not less than 60 days. The volume of specifications and sales is well maintained, with the ruling price unchanged at 2.10c., Chicago. Rail steel bars are still in good demand, although prices now range from 2c. to 2.05c., Chicago. Specifications from farm machinery manufacturers are liberal and mills report that the production of fence posts for spring delivery is well under way. The bar iron market is quiet, although in the past few weeks a fair volume of business was placed by car builders and farm implement makers. The prevailing price is still 2c., Chicago.

Mill prices are: Mild steel bars, 2.10c., Chicago; common bar iron, 2c., Chicago; rail steel bars, 2c. to 2.05c., Chicago.

Jobbers quote 3c. for steel bars out of warehouse. The warehouse quotations on cold-rolled steel bars and shafting are 3.60c. for rounds and hexagons and 4.10c. for flats and squares; 4.15c. for hoops and 3.65c. for bands.

Jobbers quote hard and medium deformed steel bars at 2.60c., Chicago warehouse.

**Rails and Track Supplies.**—The early specifications from certain railroads against contracts recently placed leads the mills to expect a substantial rail buying movement in the spring. Orders for both standard and light rails have been light. One maker, however, reports bookings of 25,000 tons of spikes, bolts, tie plates and angle bars in miscellaneous lots, while another mill took orders for 5000 tons of spikes, bolts and tie plates. New business in iron tie plates is in fair volume. Light rails are now being quoted on the basis of dollars per gross ton rather than cents per pound. The present Chicago mill quotation is $38 per gross ton. The Southern Pacific inquiry for 100,000 tons of standard rails is being held up temporarily. It is reported that the Chicago & Alton, the Soo Line and the Duluth, South Shore & Atlantic will soon make their rail requirements known.

Standard Bessemer and open-hearth rails, $43; light rails, rolled from billets, $38 per gross ton, f.o.b. maker's mill.

Standard railroad spikes, 2.90c. to 3c., mill; track bolts with square nuts, 3.90c. to 4c., mill; steel tie plates, 2.35c. f.o.b. mill; angle bars, 2.75c., f.o.b. mill.

Jobbers quote standard spikes out of Chicago warehouse at 3.55c., base, and track bolts, 4.55c., base.

**Wire Products.**—Mill operations are being gradually expanded to meet the requirements of the trade and at the same time round out mill stocks which had become somewhat broken. The consensus of opinion throughout the industry is that spring trade will be in substantial volume. Prices, which are steady and unchanged, are shown on page 167.

We quote warehouse prices f.o.b. Chicago: No. 8 black annealed wire, $3.30 per 100 lb.; common wire nails, $3.05 per keg; cement-coated nails, $2.05 to $2.20 per count keg.

**Structural Material.**—Judging by the volume of plain material booked by mills during the week building activity in Chicago is well maintained. Engineers and architects are busy and, at the same time, are handicapped by the dearth of capable designers. New projects brought before the trade are numerous and bulk

large in the aggregate. The outstanding inquiry of the week is for 3000 tons for an addition to the Roanoke Building, Chicago. Prices obtained by fabricators show little change, although there has been a strong effort to revise them upward. As a general rule, shops are booked from four to six weeks ahead. Fabricators complain that a shortage of detailers and draftsmen is slowing up the forwarding of drawings and specifications to the shops. Fabricators' stocks are reported as low, but with mill deliveries gradually creeping forward the need for heavier supplies is indicated.

The mill quotation on plain material is 2.10c., Chicago. Jobbers quote 3.10c. for plain material out of warehouse.

**Sheets.**—Makers report that mill operations are unchanged and that both new business and specifications remain in good volume. Backlogs are said to cover two months, and some makers of specialties are sold through the first quarter. Blue annealed sheets are in good demand, with galvanized running a close second. Chicago mill prices are steady at 3.45c. for black, 2.65c. for blue annealed, and 4.70c. for galvanized.

Chicago delivered prices from mill are 3.50c. for No. 28 black, 2.65c. for No. 10 blue annealed and 4.75c. for No. 28 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

Jobbers quote f.o.b. Chicago: 3.50c. base for blue annealed, 4.10c. base for black, and 5.25c. base for galvanized.

**Cast Iron Pipe.**—Milwaukee will close Jan. 22 on 500 tons of 6-in., 1000 tons of 8-in., 1000 tons of 12-in., 500 tons of 16-in., all Class C, and also 130 tons of special castings. Kenosha, Wis., will close Jan. 14 on 400 tons of 6-in., 150 tons of 8-in., 190 tons of 12-in. and 70 hydrants. Lebanon, Ill., is inquiring for 500 tons of 4, 6 and 8-in., Class B pipe. Bids submitted to Bloomington, Ind., have been rejected and the city will readvertise. The general contract for 3000 tons of 6, 8, 10 and 16-in. pipe for Dearborn, Mich., was divided between John A. McDace and J. W. Lovett. The prevailing price in the Chicago market is still $42, base Birmingham, for 6-in. and larger sizes.

We quote per net ton, delivered Chicago, as follows: Water pipe, 4-in., $54.20; 6-in. and over, $50.20; Class A and gas pipe, $4 extra.

**Small Billets.**—Billets for rolling, 4-in. and over, are active and are now being quoted at $36 per gross ton.

**Coke.**—Shipments are well maintained and prices are unchanged at $10.50, ovens, or $11, delivered in the Chicago switching district.

**Cold-Finished Steel Bars.**—Deliveries are gradually extending as a result of increasing demand. Prices are firm at 2.50c., f.o.b. Chicago.

**Bolts, Nuts and Rivets.**—Makers' operations have expanded and are now above the 75 per cent mark. Contracts for the first quarter are practically all closed, and are said to be equal in volume to those placed for the fourth quarter. Small rivets are active and remain unchanged at 70, 10 and 5 to 70 and 10 off list, Chicago. Large rivets are also in good demand and are firm at $2.75 per 100 lb., base Chicago.

Jobbers quote structural rivets, 3.50c. per lb.; boiler rivets, 3.70c. per lb.; machine bolts up to ⅞ x 4 in., 50 and 5 per cent off; larger sizes, 50 and 5 off; carriage bolts up to ⅞ x 4 in., 47½ off; larger sizes, 47½ off; hot-pressed nuts, square, tapped or blank, $3.25 off; hot-pressed nuts, hexagon, tapped or blank, $3.75 off; coach or lag screws, 55 and 5 per cent off.

**Reinforcing Bars.**—This market is quiet so far as actual buying is concerned. New inquiries, however, are in fair volume. With the winter season only well started, there is no urgent incentive for users to close contracts at this time. The winter construction which is now in progress is largely that which has run over from awards made late in the fall. The trade does not expect to feel the demands for spring construction until after Feb. 1. Billet steel reinforcing bars are steady at 2.60c., Chicago warehouse. Awards recently made and fresh inquiries are shown on page 179.

**Old Material.**—The market is dull and transactions are small and few in number. Prices, at least for the moment, have found a footing and are unchanged from a week ago. Large users of heavy melting steel are still remaining out of the market, and one mill has refused shipments for two weeks. Melting steel on a list sold by the Santa Fe last week brought $15.25, delivered. Steel foundries are said to be more active and, as a result, low phosphorus grades are holding fairly well. Dealers report a few inquiries for carload lots of malleable scrap. Railroad lists include 7500 tons advertised by the Chesapeake & Ohio, 2000 tons by the Northern Pacific, 1200 tons by the Chicago, Milwaukee & St. Paul and small lists by the Soo Line and the Chicago & Alton.

We quote delivered in consumers' yards, Chicago and vicinity, all freight and transfer charges paid for all items except relaying rails, including angle bars to match, which are quoted f.o.b. dealers' yards:

*Per Gross Ton*

| | |
|---|---|
| Iron rails | $18.00 to $18.50 |
| Cast iron car wheels | 18.00 to 18.50 |
| Relaying rails, 56 lb. to 60 lb. | 25.00 to 26.00 |
| Relaying rails, 65 lb. and heavier | 26.00 to 31.00 |
| Forged steel car wheels | 18.50 to 19.00 |
| Railroad tires, charging box size | 19.00 to 19.50 |
| Railroad leaf springs, cut apart | 19.00 to 19.50 |
| Rails for rolling | 17.50 to 18.00 |
| Steel rails, less than 3 ft. | 18.50 to 19.00 |
| Heavy melting steel | 15.25 to 15.50 |
| Frogs, switches and guards, cut apart | 17.00 to 17.50 |
| Shoveling steel | 15.25 to 15.50 |
| Drop forge flashings | 11.50 to 12.00 |
| Hydraulic compressed sheets | 13.50 to 14.00 |
| Axle turnings | 15.00 to 15.50 |
| Steel angle bars | 18.00 to 18.50 |
| Steel knuckles and couplers | 18.00 to 18.50 |
| Coil springs | 19.00 to 19.50 |
| Low phos. punchings | 17.25 to 17.75 |
| Machine shop turnings | 9.25 to 9.75 |
| Cast borings | 13.50 to 13.75 |
| Short shoveling turnings | 13.25 to 13.75 |
| Railroad malleable | 18.00 to 18.50 |
| Agricultural malleable | 16.50 to 17.00 |

*Per Net Ton*

| | |
|---|---|
| Iron angle and splice bars | 16.50 to 17.00 |
| Iron arch bars and transoms | 21.00 to 21.50 |
| Iron car axles | 26.00 to 26.50 |
| Steel car axles | 17.50 to 18.00 |
| No. 1 busheling | 12.00 to 12.50 |
| No. 2 busheling | 9.25 to 9.75 |
| Pipes and flues | 11.00 to 11.50 |
| No. 1 railroad wrought | 13.50 to 14.00 |
| No. 2 railroad wrought | 13.50 to 14.00 |
| No. 1 machinery cast | 17.00 to 17.50 |
| No. 1 railroad cast | 16.25 to 16.75 |
| No. 1 agricultural cast | 16.25 to 16.75 |
| Locomotive tires, smooth | 16.50 to 17.00 |
| Stove plate | 14.75 to 15.25 |
| Grate bars | 14.00 to 14.50 |
| Brake shoes | 13.00 to 13.50 |

## Receivership for Eastern Steel Co.

Edward L. Herndon, for many years treasurer of the Eastern Steel Co., Pottsville, Pa., has been appointed receiver in equity of the company by Judge Dickinson in the United States District Court in Philadelphia. The company has been in financial difficulties for some time and recently its affairs have been conducted by a bondholders' committee.

The company has been an important factor in the Eastern structural steel situation, although its output at maximum capacity has seldom exceeded 10,000 tons a month. The plant consists of an open-hearth department, which was built in 1890 and later rebuilt, and several shape mills, and the company has operated under lease the two blast furnaces of the Warwick Iron & Steel Co., which are now out of blast due to unsatisfactory conditions in the Eastern pig iron market.

The request for a receivership was made by W. J. Rainey, Inc., coke operator, with a claim of $45,605. In answer to the suit the company joined in the request for a receivership and filed a statement showing that the book value of the property is $11,780,000 and the indebtedness $4,780,000. A lack of cash was given as a reason for the inability of the company to meet maturing obligations, which include a claim of the United States Government amounting to about $700,000 for back taxes.

James A. Burden, August Heckscher and Payne Whitney are among the largest owners of stock, and prior to the period of control by a bondholders' committee the affairs of the company were largely guided by James A. Burden.

# Boston

## Coke Easier—Pig Iron Market Has Weaker Tone

BOSTON, Jan. 12.—Current buying of pig iron is for filling in or mixture purposes. A 100-ton order is a large one these days and sales the past week approximated 1000 tons. Prices on domestic and foreign irons are unchanged. Melters assert that eastern Pennsylvania iron is offered at 50c. a ton reduction, but this report cannot be verified. It is also said that the foreign iron is somewhat easier, with the higher silicons obtainable at the same price as lower grades; yet it would appear that when duties, handling, selling and freight charges are added the net cost to consumer is practically as heretofore. While current iron sales are limited, melters evince growing interest in second quarter requirements, with intention of purchasing at an early date. No specific open inquiries are reported in the market, and it is only occasionally a furnace is willing to commit itself on price. Therefore negotiations are only in the preliminary stage. A majority of New England foundries are busy and growing more so each week; consequently many who believed themselves well covered into the second quarter, will have to buy iron sooner than anticipated.

We quote delivered prices on the basis of the latest sales as follows, having added $3.65 freight from eastern Pennsylvania, $4.91 from Buffalo, $5.92 from Virginia, and $9.60 from Alabama:

| | |
|---|---|
| East. Penn., sil. 1.75 to 2.25 | $26.65 |
| East. Penn., sil. 2.25 to 2.75 | 27.15 |
| Buffalo, sil. 1.75 to 2.25 | $25.91 to 26.91 |
| Buffalo, sil. 2.25 to 2.75 | 26.41 to 27.41 |
| Virginia, sil. 1.75 to 2.25 | 29.92 |
| Virginia, sil. 2.25 to 2.75 | 30.42 |
| Alabama, sil. 1.75 to 2.25 | 31.60 to 32.60 |
| Alabama, sil. 2.25 to 2.75 | 32.10 to 33.10 |

**Shapes and Plates.**—The demand for shapes is less active, with prices ranging from 2.265c. to 2.365c. delivered, or 1.90c. to 2c., Pittsburgh base. The plate market, although somewhat less active, is steadier, with sales more often at 2.165c., delivered, than at 1.965c. A fortnight or so ago the situation was just the opposite. Activity among fabricators is confined largely to small jobs. A few large ones, including a new Stone & Webster, Inc., office building and new headquarters for the Boston Consolidated Gas Co., are in the making. In addition, the Parker House requirements, involving four figures, are still to be let.

**Warehouse Business.**—Warehouse prices on cap and set screws have been advanced 10 per cent to 15 per cent. This advance is independent of any action by producers. Hexagon-head cap screws are now 65 and 10 per cent off; square-head set screws, 65 and 10 per cent off; headless, 65 per cent off, and fillister cap screws, 25 per cent discount. Owing to the open weather so far this month the movement of mill products out of local warehouses has been unusually good for January.

**Coke.**—The by-product foundry coke situation is easier, with ovens making more prompt deliveries on first half contract specifications. Prices quoted by the New England Coal & Coke Co. and the Providence Gas Co. remain unchanged at $13 a ton, delivered, within a $3.10 freight rate zone. The easier deliveries are ascribed to a falling off, as is usual at this time of the year, in foundry demands, and to a slowing up in domestic coke shipments, partly as a result of weather conditions and partly because of the use of foreign and domestic gas cokes, as well as imported coals, as anthracite substitutes. Gas coke, for house heating, is available in certain localities at as low as $10 a ton delivered at homes, a price considerably under the cost of by-product domestic and imported coke delivered to the consumer. Less interest is shown in Connellsville foundry and domestic fuel, and less Troy, N. Y., by-product domestic fuel is coming into New England just now.

**Old Material.**—At the moment New England consumers are buying comparatively little old material and shipments to Pennsylvania districts are at a minimum. Pittsburgh district mills, however, are sounding out the market as to prices and deliveries, which gives color to local talk of greater market activity within the near future. For shipment outside New England, dealers will pay as high as $13 a ton on cars for heavy melting steel, although $12.50 is the general going price. Material for New England consumption is generally quoted at $12.50 and occasionally $12. Shipments of specified pipe contracts have been held up by eastern Pennsylvania mills. Long bundled cotton ties, railroad and yard wrought are difficult to move; consequently prices are nominal. New England supplies of borings, turnings, forged material and skeleton are increasing, but prices hold steady, the lack of active demand notwithstanding.

The following prices are for gross-ton lots delivered consuming points:

| | |
|---|---|
| Textile cast | $20.00 to $20.50 |
| No. 1 machinery cast | 19.50 to 20.00 |
| No. 2 machinery cast | 15.50 to 16.50 |
| Stove plate | 14.00 to 14.50 |
| Railroad malleable | 19.50 to 20.00 |

The following prices are offered per gross-ton lots, f.o.b. Boston rate shipping points:

| | |
|---|---|
| No. 1 heavy melting steel | $12.00 to $12.50 |
| No. 1 railroad wrought | 13.25 to 13.50 |
| No. 1 yard wrought | 12.00 to 12.50 |
| Wrought pipe (1 in. in diameter, over 2 ft. long) | 12.00 to 12.50 |
| Machine shop turnings | 9.50 to 10.00 |
| Cast iron borings, chemical | 11.50 to 12.00 |
| Cast iron borings, rolling mill | 9.50 to 10.00 |
| Blast furnace borings and turnings | 9.00 to 9.50 |
| Forged scrap | 10.00 to 10.50 |
| Bundled skeleton, long | 10.00 to 10.50 |
| Forged flashings | 10.00 to 10.50 |
| Bundled cotton ties, long | 8.50 to 9.00 |
| Bundled cotton ties, short | 10.00 to 10.50 |
| Shafting | 18.25 to 18.50 |
| Street car axles | 18.00 to 18.50 |
| Rails for rerolling | 13.50 to 14.00 |
| Scrap rails | 12.00 to 12.50 |

# St. Louis

## Mill Has Heavy Backlog in Sheets—Coke Stocks Reduced

ST. LOUIS, Jan. 12.—The pig iron market remains quiet. Only a few sales have been made during the last few weeks, and pending inquiries total only about 1000 tons, in lots ranging from a carload up to 100 tons. Melters in the district have contracted for their requirements in first quarter, and neither makers nor melters have shown any inclination to enter negotiations for second quarter business. Activity in the district is greater than usual; the holiday shut-down was very short, in most instances for Christmas day only. The stove foundries, which usually remain idle until Jan. 15, resumed more than a week ago. Jobbing foundries are very busy. All of this, together with the strong position of the makers, gives strength to the market, with prices unchanged.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices $2.16 freight from Chicago, $4.42 from Birmingham, all rail, and 81c. average switching charge from Granite City:

| | |
|---|---|
| Northern fdy., sil. 1.75 to 2.25 | $25.66 |
| Northern malleable, sil. 1.75 to 2.25 | 25.66 |
| Basic | 25.66 |
| Southern fdy., sil. 1.75 to 2.25 | $26.42 to 27.92 |
| Granite City iron, sil. 1.75 to 2.25 | 24.31 to 24.81 |

**Finished Iron and Steel.**—The demand for sheets is unusually good. The National Enameling & Stamping Co., which advanced its prices $2 a ton on all grades, has 45 per cent more business on its books than at this time last year. Buying generally is still along conservative lines. Fabricators of structural steel, who had a good business in 1925, are looking for orders. Several large railroad inquiries for track fastenings previously reported are still pending.

For stock out of warehouse we quote: Soft steel bars, 3.15c. per lb.; iron bars, 3.15c.; structural shapes, 3.25c.; tank plates, 3.25c.; No. 10 blue annealed sheets, 3.60c.; No. 28 black sheets, cold rolled, one pass, 4.60c.; galvanized sheets, No. 28, 5.70c.; black corrugated sheets, 4.65c.; galvanized, 5.75c.; cold rolled rounds, shafting and screw stock, 3.75c.; structural rivets, 3.65c.; boiler rivets, 3.85c.; tank rivets, $\frac{7}{8}$-in. diameter and smaller, 70 per cent off list; machine bolts, 55 per cent; carriage bolts, 50 and 5 per cent; lag screws, 55½ per cent; hot-pressed nuts, square, $3.25 off list; hexagon, blank or tapped, $3.75 off list.

**Coke.**—Demand for coke continues strong. The Midland Coke & Iron Co. is now sold up on coke, its once heavy stock piles now being leveled. The call for domestic grades is still heavy, largely due to the anthracite strike.

**Old Material.**—Consumers continue to mark time. The only sale of the week was a small lot of cast scrap for February and March delivery at present prices. Dealers believe that there will be a buying movement soon. Only a few price changes of from 25c. to 75c. a ton have been recorded. Railroad lists include St. Louis-San Francisco, 1000 tons; Chicago & Eastern Illinois, 900 tons; Missouri-Kansas-Texas, 3100 tons; Atchison, Topeka & Santa Fe, 5000 tons; Southern, 5800 tons; Great Northern, 3300 tons, and Gulf, Colorado & Santa Fe, 450 tons of scrap rail on which bids were asked by wire.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

| | *Per Gross Ton* | |
|---|---|---|
| Iron rails | $14.50 to | $15.00 |
| Rails for rolling | 18.25 to | 18.75 |
| Steel rails less than 3 ft. | 19.25 to | 19.75 |
| Relaying rails, 60 lb. and under | 24.00 to | 25.00 |
| Relaying rails, 70 lb. and over | 30.00 to | 31.00 |
| Cast iron car wheels | 18.00 to | 18.50 |
| Heavy melting steel | 15.00 to | 15.50 |
| Heavy shoveling steel | 15.00 to | 15.50 |
| Frogs, switches and guards cut apart | 17.50 to | 18.00 |
| Railroad springs | 19.00 to | 19.50 |
| Heavy axles and tire turnings | 12.25 to | 12.75 |
| No. 1 locomotive tires | 16.75 to | 17.25 |
| *Per Net Ton* | | |
| Steel angle bars | 15.00 to | 15.50 |
| Steel car axles | 17.50 to | 18.00 |
| Iron car axles | 23.50 to | 24.00 |
| Wrought iron bars and transoms | 19.50 to | 20.00 |
| No. 1 railroad wrought | 13.00 to | 13.50 |
| No. 2 railroad wrought | 13.25 to | 13.75 |
| Cast iron borings | 11.00 to | 11.50 |
| No. 1 busheling | 11.50 to | 12.00 |
| No. 1 railroad cast | 15.00 to | 15.50 |
| No. 1 machinery cast | 17.00 to | 17.50 |
| Railroad malleable | 14.50 to | 15.00 |
| Machine shop turnings | 7.75 to | 8.25 |
| Bundled sheets | 8.75 to | 9.25 |

# San Francisco

## Irrigation Project at Yakima, Wash.—Structural Awards of 6656 Tons

SAN FRANCISCO, Jan. 8 (*By Air Mail*).—Plans and specifications are being completed by the Department of the Interior, Bureau of Reclamation, Yakima, Wash., for the construction of the Kittitas division of the Yakima irrigation project, embracing the construction of a diversion dam and canal system to supply water to about 70,000 acres of land in the Yakima Valley in the vicinity of Ellensburg, Wash. Bids are expected to be called for in the early spring on a miscellaneous assortment of materials and equipment, in which will be included about 2750 tons of structural material.

Most departments of the market have been somewhat colorless during the past week, but fabricating awards totaled 6656 tons. Pending projects and jobs on which bids are expected to be called in the near future will require close to 40,000 tons of structural steel. Prices generally are firm, with the single exception of out-of-stock quotations on reinforcing bars.

**Pig Iron.**—A local firm received a shipment of about 106 tons of Chinese foundry pig iron during the week, which is being quoted at about $25 to $25.50, delivered. While there has been no change in quotations since the recessions of a week ago, there are indications that some sellers are inclined to ask more for imported irons than they were quoting a week or ten days ago.

| | | |
|---|---|---|
| *Utah basic | $27.00 to | $28.00 |
| *Utah foundry, sil. 2.75 to 3.25 | 27.00 to | 28.00 |
| **English foundry, sil. 2.75 to 3.25 | 25.00 to | 26.00 |
| **Belgium foundry, sil. 2.75 to 3.25 | | 24.00 |
| **Dutch foundry, sil. 2.75 to 3.25 | | 24.00 |
| **Indian foundry, sil. 2.75 to 3.25 | 24.00 to | 25.00 |
| **German foundry, sil. 2.75 to 3.25 | | 24.00 |
| **Chinese foundry, sil. 3 to 3.50 | | 25.50 |

*Delivered San Francisco.
**Duty paid, f.o.b. cars San Francisco.

**Shapes.**—Structural material continues to be the most active commodity in the market. Lettings closed during the week call for 6656 tons. The largest individual award, 1800 tons, for an office building in San Francisco, was taken by the United States Steel Products Co. Eastern mill quotations are firm at 2.35c. to 2.40c. per lb., c.i.f. Coast ports.

**Plates.**—Although a number of projects are up for figures or pending, no jobs calling for 100 tons, or more, are known to have been closed. The city of Gresham, Ore., will close bids Jan. 13 for about 100 tons. The closing of bids on the pipe line job for the city of Oswego, Ore., has been postponed until Jan. 19. There has been no evidence of price concessions during the past week. Practically all of the Eastern mills are asking 2.30c. to 2.35c., c.i.f. Coast ports.

**Bars.**—Lettings of reinforcing bars for the week total 730 tons. Local bar jobbers are still confronted with the problem of price shading. Current quotations are nominal at 2.75c. to 2.85c., base, per lb., on less-than-carload lots, and on larger lots 2.50c. is understood to be still possible.

**Warehouse Business.**—Most of the local jobbing firms are taking inventory, and little new business is being done. Prices are unchanged.

Local warehouse prices, per 100 lb., are as follows: Merchant bars, $3.30 base; merchant bars, $\frac{3}{8}$ in. and under, rounds, squares and flats, $3.80 base; soft steel bands, $4.15 base; angles, $\frac{3}{16}$ in. and larger x 1$\frac{1}{2}$ in. to 2$\frac{3}{4}$ in., incl., $3.30 base; channels and tees, $\frac{3}{8}$ in. to 2$\frac{3}{4}$ in., incl., $3.90 base; angles, beams and channels, 3 in. and larger, $3.30 base; tees, 3 in. and larger, $3.30 base; universal mill plates, $\frac{1}{4}$ in. and heavier, stock lengths, $3.30 base; spring steel, $\frac{1}{4}$ in. and thicker, $6.30 base; wire nails, $3.50 base; cement coated nails, $3 base; No. 10 blue annealed sheets, $3.75; No. 28 galvanized sheets, $6; No. 28 black sheets, $4.75.

**Cast Iron Pipe.**—Contracts closed during the week call for 304 tons, and fresh inquiries total 1229 tons. Prices are unchanged at $50, base, water shipment, San Francisco. Among the lettings of the week are the following:

City of Santa Cruz, Cal., 8-in. Class B, 124 tons to United States Cast Iron Pipe & Foundry Co.

City of Auburn, Wash., 180 tons to American Cast Iron Pipe Co.

**Steel Pipe.**—The city of Los Angeles has placed 220 tons of 6-in. Matheson joint pipe, required under Specification 786-A, with the Pacific Pipe & Supply Co., Los Angeles. The city of Upland, Cal., will call bids in about two weeks for 225 tons of standard pipe, and Los Angeles will close bids Jan. 17 on 470 tons of 8-in. Matheson joint pipe or equivalent, required under Specification 176-C.

**Rails and Track Supplies.**—An unnamed lumber company in the Pacific Northwest placed 500 tons of 60-lb. rails with Belgian interests at a price understood to have been equivalent to $35, c.i.f. Coast ports. This is $2.50 under the last low quotation known to have been made on foreign rails. Eastern mill quotations range from $41 to $43, mill. The Longview, Portland & Northern Railway Co., Longview, Wash., is understood to have placed the following: 50 tons of 56-lb. relaying rails, 731 gross tons of 60-lb. relaying rails, 19 gross tons of 65-lb. relaying rails, 140 net tons of 56-lb. relaying rails, 140 net tons of 56-lb. angle bars, and 41 net tons of 60-lb. angle bars.

**Coke.**—Buyers are well covered and the week has brought no fresh developments. A shipment of English coke is expected at this port the latter part of the month. Importers quote as follows:

English beehive, $15 to $16 per ton at incoming dock, and English by-product, $12 to $14; German by-product, $11.50 to $12.

**Old Material.**—Some small buying is still being done against first quarter requirements but most of the local users are fairly well covered.

Prices for scrap delivered to consumers' yards are as follows:

| | *Per Gross Ton* | |
|---|---|---|
| No. 1 heavy melting steel | $11.50 to | $12.00 |
| Scrap rails, miscellaneous | 11.50 to | 12.00 |
| Rolled steel wheels | 11.50 to | 12.00 |
| Couplers and knuckles | 11.50 to | 12.00 |
| Country mixed scrap | 8.00 to | 8.50 |
| Mixed borings and turnings | 6.00 to | 6.50 |
| No. 1 cast scrap | 19.50 to | 20.00 |

# Cincinnati

## Barge Shipments of Wire—Steel Bookings Encouraging—Tin Plate Inquiry

CINCINNATI, Jan. 12.—Pig iron buyers are following a waiting policy and consequently sales in the past week have been confined to small tonnages. While only a few inquiries for second quarter have appeared, furnaces in the Ironton district are booking orders for that delivery at $21 base, Ironton. Alabama producers are strongly fortified with first quarter commitments and have given no indication of when they will re-enter the market to bid for second quarter business. The movement of Tennessee iron at $22, base Birmingham, has been sluggish. The Ross Meehan Co., Chattanooga, Tenn., has contracted for 1000 tons of malleable iron at less than $21, Ironton. A Dayton, Ohio, melter has taken 500 tons of Northern foundry iron. Inquiry is unusually light, and buying in the next few weeks is expected to be unimportant. The Andrews Steel Co., Newport, Ky., is in the market for from 300 to 600 tons of ferromanganese for delivery at the rate of 100 tons a month beginning in April. A local broker has sold 100 tons of spiegeleisen, while a consumer in this territory has purchased 100 tons of fluorspar.

Based on freight rates of $3.69 from Birmingham and $2.27 from Ironton, we quote f.o.b. Cincinnati:

| | |
|---|---|
| Alabama fdy., sil. 1.75 to 2.25 (base) | $25.69 |
| Alabama fdy., sil. 2.25 to 2.75 | 26.19 |
| Tennessee fdy., sil. 1.75 to 2.25 | 25.69 |
| Southern Ohio silvery, 8 per cent | 32.77 |
| Southern Ohio fdy., sil. 1.75 to 2.25 | 23.27 |
| South'n Ohio, malleable (nominal) | 23.27 |

**Tin Plate.**—A nearby can maker has put out an inquiry for 2500 boxes for immediate delivery. It is reported that the Procter & Gamble Co., which will begin the manufacture of cans for its own use about March 1, will buy approximately 200,000 boxes of tin plate annually, although it is expected that the company's consumption will grow rapidly as its can-making operations are expanded. Sellers are holding to $5.50 per base box, Pittsburgh.

**Finished Material.**—While no large tonnages have been placed, specifications and orders were better than sellers had expected. District representatives of mills believe that consumers will make heavy purchases the latter part of January and that the month will turn out to be above the average in total bookings. Bars are holding firmly to 2c. to 2.10c., base Pittsburgh, and plates are selling more commonly at 2c., base Pittsburgh, although 1.90c. can still be done on attractive lots. Shapes range from 2c. to 2.10c., base Pittsburgh, with demand only fair. Little opposition to the present prices on sheets is encountered, and mills have taken contracts for a considerable quantity of galvanized and blue annealed sheets, at 4.60c. and 2.50c., base Pittsburgh, respectively. Improvement in the demand for black sheets is noted, with quotations showing strength at 3.35c., base Pittsburgh. Sheet mill operations in this territory remain at approximately 88 per cent of capacity. Considerable activity has developed in nails and wire. An Ironton producer will ship a barge load of nails and wire to Louisville this month, and will also deliver a barge load to Cincinnati for distribution among local jobbers. Common wire nails are quoted at $2.65 per keg, Pittsburgh or Ironton, and plain wire at $2.50 per 100 lb., Pittsburgh or Ironton. Structural steel is moving freely, but fabricators complain that they are compelled to bid so low to obtain jobs that little profit remains. Local gas holder fabricators have enough work ahead to keep them busy for at least two to three months.

**Reinforcing Bars.**—A dearth of attractive jobs has had a depressing effect upon the market, but indications are favorable for increased activity during the latter part of January. New billet bars are firm at 2c., Cleveland, and rail steel bars at 1.90c., mill.

**Warehouse Business.**—The volume of orders booked by local jobbers during the first week of January attained satisfactory proportions. Sales of bars, plates and sheets have been especially good, and there is a healthy demand for cold-rolled products. Prices are steady and unchanged.

Cincinnati jobbers quote: Iron and steel bars, 3.30c. per lb.; reinforcing bars, 3.30c.; hoops, 4c. to 4.25c.; bands, 3.95c.; shapes, 3.40c.; plates, 3.40c.; cold-rolled rounds and hexagons, 3.85c.; squares, 4.35c.; open-hearth spring steel, 4.75c. to 5.75c.; No. 10 blue annealed sheets, 3.60c.; No. 28 black sheets, 4.10c. to 4.30c.; No. 28 galvanized sheets, 5.25c. to 5.40c.; No. 9 annealed wire, $3 per 100 lb.; common wire nails, $2.95 per keg base; cement coated nails, $2.25 per keg; chain, $7.55 per 100 lb. base; large round head rivets, $3.75 base; small rivets, 65 per cent off list. Boiler tubes, prices net per 100 ft.: lap-welded steel tubes, 2-in., $18; 4-in., $38; seamless, 2-in., $19; 4-in., $39.

**Coke.**—The domestic coke market has been given an impetus by the cold weather of the past few days. A considerable volume of Alabama by-product domestic coke is being shipped to Northern points, and at least three producers in the South have sufficient orders to cover their entire output for the next month. Difficulty in securing cars is being experienced by Alabama ovens. A local dealer has sold 1800 tons of Pocahontas foundry coke for delivery over the first half of the year. Sales of 2500 tons of foundry and 3500 tons of furnace coke have been made by a Cincinnati broker. Shipments of by-product foundry coke parallel those in December. Prices are unchanged.

Based on freight rates of $2.14 from Ashland, Ky., $3.53 from Connellsville, and $2.59 from Wise County ovens, and $2.90 from New River ovens, we quote f.o.b. Cincinnati: Connellsville foundry, $8.53 to $9.53; Wise County foundry, $8.09 to $9.59; New River foundry, $9.90 to $10.90; by-product foundry, $10.64.

**Old Material.**—Consumers are showing but slight interest and the outlook for the next month indicates a continuation of the present dullness. Prices have weakened under the strain of the sagging market and heavy melting steel has declined 50c. The Louisville & Nashville has a list totaling approximately 9000 tons, which will close in a few days.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

| | |
|---|---|
| *Per Gross Ton* | |
| Heavy melting steel | $14.00 to $14.50 |
| Scrap rails for melting | 14.50 to 15.00 |
| Short rails | 18.50 to 19.00 |
| Relaying rails | 27.50 to 28.00 |
| Rails for rolling | 15.50 to 16.00 |
| Old car wheels | 14.00 to 14.50 |
| No. 1 locomotive tires | 17.00 to 17.50 |
| Railroad malleable | 16.00 to 16.50 |
| Agricultural malleable | 15.00 to 15.50 |
| Loose sheet clippings | 10.00 to 10.50 |
| Champion bundled sheets | 11.50 to 12.00 |
| *Per Net Ton* | |
| Cast iron borings | 9.50 to 10.00 |
| Machine shop turnings | 8.00 to 8.50 |
| No. 1 machinery cast | 20.00 to 20.50 |
| No. 1 railroad cast | 16.00 to 16.50 |
| Iron axles | 23.00 to 23.50 |
| No. 1 railroad wrought | 12.00 to 12.50 |
| Pipes and flues | 9.50 to 10.00 |
| No. 1 busheling | 10.50 to 11.00 |
| Mixed busheling | 9.50 to 10.00 |
| Burnt cast | 10.00 to 10.50 |
| Stove plate | 11.00 to 11.50 |
| Brake shoes | 11.00 to 11.50 |

# Buffalo

## Mill Operations Continue at 90 Per Cent —Pig Iron Dull

BUFFALO, Jan. 12.—The pig iron market is still quiet, with not more than 1500 tons to 2000 tons pending. One producer lists one inquiry for 300 tons of foundry, but this appears to be the largest before the trade this week. The majority are carload lots and fill-in tonnages. It is too early after the inventory period, producers believe, for any heavy buying to begin, but they expect it to develop before the end of the month. Iron for delivery this quarter can be placed at $21, Buffalo, for No. 2 plain foundry and malleable, but there is no indication that this price has been shaded. On the contrary, the differentials for silicons of 50c. for No. 2X and $1 for No. 1 foundry are being adhered to. Two furnaces have set their prices at $22 for current delivery and one of these is making a similar quotation on second quarter deliveries. The differentials are being asked on this base also. One of the district furnaces is expected to go out for relining

shortly. Report credits it with a production of 1,000,000 tons since it was last repaired.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

| | |
|---|---|
| No. 2 plain, sil. 1.75 to 2.25 | $21.00 to $22.00 |
| No. 2X foundry, sil. 2.25 to 2.75 | 21.50 to 22.50 |
| No. 1 foundry, sil. 2.75 to 3.25 | 22.50 to 23.50 |
| Malleable, sil. up to 2.25 | 21.00 to 22.00 |
| Basic | 20.50 to 21.00 |
| Lake Superior charcoal | 29.28 |

**Finished Iron and Steel.**—Mills regard the situation as very good. Operations continue at upwards of 90 per cent of capacity, though forward buying has tapered slightly during the past week. Bars are firm at 2.265c. Buffalo. However, 2.365c. seems to have disappeared as a going price. Plates and shapes are both bringing 2.165c., Buffalo. The sheet market stands up well, with black sheets 3.35c. and galvanized at 4.60c., base Pittsburgh. One price reported on galvanized was 4.30c., but this was an isolated instance. The nut and bolt market is firm with most consumers covered for their first quarter requirements at the same prices as for fourth quarter. A garbage incinerator contract has been placed, calling for 150 tons of reinforcing bars.

Warehouse prices are being quoted as follows: Steel bars, 3.30c. per lb.; steel shapes, 3.40c.; steel plates, 3.40c.; No. 10 blue annealed sheets, 3.90c.; No. 28 black sheets, 4.60c.; No. 28 galvanized, 5.75c.; cold-rolled shapes, 4.45c.; cold-rolled rounds, 3.95c.; wire nails, 3.90c.; black wire, 3.90c.

**Old Material.**—Little change has taken place since last week and the expected buying did not develop, except for the customary weekly purchases by one mill which is almost continually in the market. Mill operations continue at a high pace, but there has been some trimming of backlogs. The New York Central, the Pennsylvania and some of the Erie railroad lists closed last week. Dealers paid $19 for the heavy melting steel, delivered consuming plants, showing their optimistic frame of mind. The market is showing little activity and outside of the buying of railroad offerings, the only active commodities were cast iron borings and machine shop turnings, the former selling at $14 to $14.50 and the latter at $13 to $13.50. Specialties are weaker. Dealers do not expect higher prices, but they do look for more business.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

| | |
|---|---|
| Heavy melting steel | $18.50 to $19.00 |
| Low phosphorus | 20.00 to 21.00 |
| No. 1 railroad wrought | 16.50 to 17.00 |
| Car wheels | 17.50 to 18.00 |
| Machine shop turnings | 13.50 to 14.00 |
| Mixed borings and turnings | 14.00 to 14.50 |
| Cast iron borings | 14.00 to 14.50 |
| No. 1 busheling | 17.50 to 18.00 |
| Stove plate | 15.00 |
| Grate bars | 14.50 to 15.00 |
| Hand-bundled sheets | 13.00 to 13.50 |
| Hydraulic compressed | 17.50 to 18.50 |
| No. 1 machinery cast | 17.50 to 18.00 |
| Railroad malleable | 20.00 to 21.00 |
| No. 1 cast scrap | 17.50 to 18.00 |
| Iron axles | 26.00 to 27.00 |
| Steel axles | 20.00 to 21.00 |

# Birmingham

## Buying Light, Consumption Heavy—Begin Work on Open-Hearths

BIRMINGHAM, Jan. 12.—Although advanced delivery has been made on some pig iron contracts, little impression has been made on the first quarter backlogs of Southern blast furnaces. Pig iron consumers are not yet showing much interest in their second quarter needs which, however, are expected to be large. A reported delay in shipments by a prominent producer to one of the larger consumers of iron is still a matter of comment. No surplus iron is to be seen on furnace banks in this territory and of necessity production, which is now around 257,000 tons the month, will be continued. Prices are still being held at $22 to $23 per ton, Birmingham, for No. 2 foundry. Furnaces apparently are making no efforts to stimulate buying for second quarter. Foundries have all completed their inventories and have resumed operations at a steady pace with expectations of a continued heavy melt.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

| | |
|---|---|
| No. 2 foundry, 1.75 to 2.25 sil. | $22.00 to $23.00 |
| No. 1 foundry, 2.25 to 2.75 sil. | 22.50 to 23.50 |
| Basic | 22.00 |
| Charcoal, warm blast | 30.00 to 32.00 |

**Rolled Steel.**—Practically every steel mill and fabricating plant in the Birmingham district is operating at approximately capacity with plenty of work on hand and more in sight. The new sheet mill of the Tennessee Coal, Iron & Railroad Co. has been accorded a hearty welcome by numerous consuming industries which heretofore have brought in sheets from the North. Preliminary work has started on further plant expansion, including four open-hearth furnaces for the Tennessee company. The Gulf States Steel Co. now has five of its six open-hearth furnaces in operation.

**Cast Iron Pipe.**—Lettings of cast iron pressure pipe have been light for the past two weeks. Production, however, is heavy and shipments are steady, despite severe weather in many portions of the country. One of the pipe companies here has made an offer for the purchase of two blast furnaces from one of the iron companies. Present shipments of pipe are principally to the Southeast and the far West.

**Coke.**—With continued activity in the production and sale of coke prices remain firm, ranging from $5.50 to $6, Birmingham. Stocks of coke at ovens are low. Most of the iron and steel makers are making enough for their own needs, though one or two made sales on the open market some time back and are still delivering on the orders with coke they could use to advantage in their own plants.

**Old Material.**—The market is firm, though not active, but much scrap is being delivered with melt heavy.

We quote per gross ton, f.o.b. Birmingham district yards, as follows:

| | |
|---|---|
| Cast iron borings, chemical | $15.00 to $16.00 |
| Heavy melting steel | 14.00 to 14.50 |
| Railroad wrought | 13.00 to 13.50 |
| Steel axles | 19.00 to 20.00 |
| Iron axles | 18.00 to 19.00 |
| Steel rails | 14.00 to 14.50 |
| No. 1 cast | 17.00 to 17.50 |
| Tramcar wheels | 17.00 to 17.50 |
| Car wheels | 16.00 to 16.50 |
| Stove plate | 14.00 to 14.50 |
| Machine shop turnings | 8.00 to 8.50 |
| Cast iron borings | 8.00 to 8.50 |
| Rails for rolling | 17.50 to 18.00 |

# Toronto

## Steel Works Buy Scrap — Demand from United States Light

TORONTO, ONT., Jan. 12.—A slightly better feeling prevails in the iron and steel scrap market, with consumers again buying both for spot and future delivery. Sales during the past week compare favorably with those of a month or six weeks ago. The mills throughout Canada are in a strong position so far as operations are concerned and are the chief users of scrap at present, while electric furnace operators are also entering the market at frequent intervals.

In the Montreal district the scrap market has not yet recovered from the effects of the recent holiday season. The export demand for scrap in that district is light, although there is a feeling that shipments to the United States will be resumed soon. Dealers' buying prices are firm as follows:

| | Toronto | Montreal |
|---|---|---|
| *Per Gross Ton* | | |
| Steel turnings | $10.00 | $7.50 |
| Machine shop turnings | 10.00 | 7.50 |
| Wrought pipe | 6.00 | 6.50 |
| Rails | 11.00 | 10.00 |
| No. 1 wrought scrap | 12.00 | 13.00 |
| Heavy melting steel | 11.00 | 10.00 |
| Steel axles | 16.00 | 17.00 |
| Axles, wrought iron | 18.00 | 19.00 |
| *Per Net Ton* | | |
| Standard car wheels | 16.00 | 16.00 |
| Malleable scrap | 14.00 | 13.00 |
| Stove plate | 12.00 | 14.00 |
| No. 1 machinery cast | 17.00 | 17.00 |

# New York

## End of Coal Parley Casts Shadow Over Pig Iron and Coke Markets

NEW YORK, Jan. 12.—The break-up today of the conference between the anthracite miners and operators blasted hopes for an early settlement of the strike and was immediately translated into higher coke prices. The effect of this development on the pig iron market will be closely watched, especially because the recent tendency of the prices of both foreign and domestic irons has been toward weakness rather than strength. Eastern Pennsylvania iron, for example, is reported to have dipped to $22.50, furnace, for No. 2 plain, although transactions have been too few to give prices a real test. In fact, melters generally have been delaying their second quarter purchases because they felt that market conditions did not warrant their paying more for deliveries in that period than for iron bought for the current quarter. The pressure of foreign competition, the easing up of the coke market and the blowing in of additional domestic furnaces were factors counted on to depress prices. Purchases during the past week were of surprising volume, however, considering the lack of second quarter buying. Fully 15,000 tons was bought, of which 8000 tons was sold by one broker. Part of the latter was for delivery in other territories, some of it for shipment through the first half, but the preponderance of the iron was for prompt and first quarter requirements. The New York Central has closed for 800 tons of foundry iron for first quarter shipment to Frankfort, N. Y., and Elkhart, Ind. The Worthington Pump & Machinery Corporation is in the market for 600 tons of foundry for first quarter delivery to its Harrison, N. J., plant. An up-State melter wants 2000 tons of malleable for the current quarter. Foreign irons are quoted at from $21.50 to $23, base, duty paid port of entry, with the bulk of sales at about $22. Buffalo foundry is unchanged at $21 to $22, base furnace. The Colonial furnace, Riddlesburg, Pa., went in early this week.

We quote per gross ton delivered in the New York district as follows, having added to furnace prices $2.52 freight from eastern Pennsylvania, $4.91 from Buffalo and $5.54 from Virginia:

| | |
|---|---|
| East. Pa. No. 2 fdy., sil. 1.75 to 2.25 | $25.52 |
| East. Pa. No. 2X fdy., sil. 2.25 to 2.75 | $25.52 to 26.02 |
| East. Pa. No. 1X fdy., sil. 2.75 to 3.25 | 26.02 to 26.52 |
| Buffalo fdy., sil. 1.75 to 2.25 | 25.91 to 26.91 |
| No. 2 Virginia fdy., sil. 1.75 to 2.25 | 29.54 |

**Ferroalloys.**—Conservative estimates indicate that about 100,000 tons of ferromanganese has already been sold for consumption in 1926, a very large part of which is credited to domestic producers, but it is believed that some sales were made at a concession from the prevailing price of $115, seaboard base. The inquiry for 600 tons has finally been placed with an importer and is for consumption by a large Western steel company. A Southern steel maker is inquiring for 300 to 600 tons, buyer's option, for delivery into the third quarter. There continues to be frequent sales of carload and small lots for early delivery. The situation in spiegeleisen is unchanged, there being no large business, but sales of small and carload lots are still reported. Specifications for 50 per cent ferrosilicon and standard ferrochromium are reported as satisfactory.

**Warehouse Business.**—Most jobbers report a better demand than is usual in the first week of the year. Purchasing of structural material from stock continues in fair volume, lots ranging up to as much as 25 and 30 tons. Zinc sheets, which were expected to register a decline after the holidays are holding quite firmly and dealers' stocks are reported rather small. Flathead iron wood screws are off slightly, discounts being offered up to 80, 20, 10 and 10 off list. Following the decline in the producers' price of aluminum, ingots 99 per cent pure are off about ½c. per lb. for lots out of stock and dealers' buying prices for scrap aluminum have dropped ½c. per lb. Black and galvanized sheets continue unchanged despite efforts of sellers here to bring the warehouse price more in line with present mill quotations. Prices on page 196. We quote boiler tubes per 100 ft. as follows:

Lap welded steel tubes, 2-in., $17.33; seamless steel, 2-in., $20.24; charcoal iron, 2-in., $25.; 4-in., $67.

**Finished Iron and Steel.**—Considering the very heavy steel specifications at the end of December, it is not surprising to the trade that new business since the first of the year has been very light. Nearly all consumers and jobbers got under cover, and current business is confined to small lots from buyers who do not usually provide for their wants very far ahead. It comes to light that many users of plates specified fairly large amounts late last month at prices ranging from 1.60c. to 1.70c., Pittsburgh, consequently the amount of new plate inquiry is exceptionally light, and the new price, 1.80c., Pittsburgh, so far has applied on very small lots, the price not having been tested by any large inquiry. Steel bar consumers are generally protected for first quarter at 2c., Pittsburgh, but on carload lots bought since the first of the year some mills have been able to get 2.10c., Pittsburgh. Structural shapes remain at 1.90c. The only sign of price weakness is on sheets, and while the sources of the concessions are difficult to trace, it is generally acknowledged that some sales, particularly of black sheets, have been made at $2 a ton below the published prices. Concessions on galvanized and blue annealed sheets are also reported, but the evidence of cutting is not so clear as on black sheets. Structural steel lettings, a sustaining force in the active market of the fourth quarter, have fallen off since Jan. 1, but there is said to be a large tonnage awaiting negotiation for building operations to be begun in the spring.

We quote for mill shipments, New York delivery, as follows: Soft steel bars, 2.34c. to 2.44c. per lb.; plates, 2.09c. to 2.14c.; structural shapes, 2.24c. to 2.34c.; bar iron, 2.24c.

**Old Material.**—Although the market is rather quiet on all grades, prices are holding firmly with few exceptions. No. 1 heavy melting steel is unchanged from the buying prices of several weeks past, $16.50 to $17.50 per ton, the former prices being for material delivered to a Bethlehem consumer and the latter for delivery to a user at Coatesville, Pa. Machine shop turnings and bundled skeleton are being purchased at $14 per ton, delivered to a Phoenixville, Pa., consumer and at $14.50 per ton, delivered to Harrisburg, Pa. Stove plate for foundry use continues quiet with a few shipments going forward to a Bridgeport, Conn., consumer. Stove plate for steel mills use, however, is firm and fairly active at $14.50 per ton, delivered either to Phoenixville, Pa., a $3.53 per ton freight rate, or to Harrisburg, Pa., which takes a $3.78 per ton rate.

Buying prices per gross ton, New York, follow:

| | |
|---|---|
| Heavy melting steel (yard) | $11.75 to $12.25 |
| Heavy melting steel (railroad or equivalent) | 13.50 to 14.00 |
| Rails for rolling | 14.50 to 15.00 |
| Relaying rails, nominal | 23.00 to 24.00 |
| Steel car axles | 20.50 to 21.50 |
| Iron car axles | 24.50 to 25.00 |
| No. 1 railroad wrought | 14.50 to 15.00 |
| Forge fire | 10.50 to 11.00 |
| No. 1 yard wrought, long | 14.00 to 14.50 |
| Cast borings (steel mill) | 10.25 to 11.25 |
| Cast borings (chemical) | 14.00 to 14.50 |
| Machine shop turnings | 10.50 to 11.00 |
| Mixed borings and turnings | 10.75 to 11.25 |
| Iron and steel pipe (1 in. diam., not under 2 ft. long) | 12.25 to 12.75 |
| Stove plate (steel mill) | 10.50 to 11.00 |
| Stove plate (foundry) | 12.00 to 12.25 |
| Locomotive grate bars | 11.50 to 12.00 |
| Malleable cast (railroad) | 16.50 to 17.50 |
| Cast iron car wheels | 14.00 to 14.50 |
| No. 1 heavy breakable cast | 14.00 to 15.00 |

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

| | |
|---|---|
| No. 1 machinery cast | $18.50 to $19.00 |
| No. 1 heavy cast (columns, building material, etc.), cupola size | 17.00 to 17.50 |
| No. 2 cast (radiators, cast boilers, etc) | 16.00 to 16.50 |

**Cast Iron Pipe.**—Municipal inquiries for water pipe have not yet begun to appear, but the market is quite firm at present prices. The French seller is not so keenly competitive for business as in the latter months of last year, apparently being well-booked, especially on the smaller sizes. The Department of Water Supply, Gas and Electricity, New York, opened bids today cover-

ing 1000 tons of 6-in. to 16-in. water pipe in the Borough of Queens. Soil pipe makers are well-booked for the next 60 days, but a considerable part of their tonnage was taken at higher than the present discounts. The current schedule is being rather generally followed.

We quote pressure pipe per net ton, f.o.b. New York, in carload lots, as follows: 6-in. and larger, $50.60 to $52.60; 4-in. and 5-in., $55.60 and $57.60; 3-in., $65.60 to $67.60; with $5 additional for Class A and gas pipe. Discounts both of Northern and of Southern makers of soil pipe, f.o.b. New York, are as follows: 6-in., 42½ to 43¼ per cent off list; heavy, 52½ to 53¼ per cent off list.

**Coke.**—The collapse in the anthracite coal negotiations, colder weather and the production loss of the holidays have contributed to rapid upward movement of coke prices. Domestic sizes have advanced to a range of $9 to $10 per ton and foundry and furnace coke are practically at the same level, $6.50 to $7 per ton, Connellsville. By-product is unchanged at $11.52, delivered Newark or Jersey City, N. J.

# Cleveland

## Reaction in Semi-Finished Steel—Second Quarter Pig Iron Buying

CLEVELAND, Jan. 12.—Specifications against contracts for finished steel have improved the past few days, now that inventories are about over, and some new tonnage is being placed, but orders have not got back to the volume of a month ago. Reports from some of the consuming industries indicate that they have booked considerable business this month. The volume of business for the next few weeks in this territory appears to hinge on the automotive industry. While motor car builders have released some good specifications, they are acting rather cautiously in placing orders, evidently awaiting the outcome of the automobile shows before fixing production schedules. As sales of closed cars were heavy during the last three months there is a feeling that the automobile business will be rather moderate for the next few weeks, or until the approach of spring stimulates buying. Building activity shows improvement. There is virtually no change in the price situation. Steel bars remain firm at 2c., Pittsburgh. Plates lack strength and specifications and new orders are not plentiful. While the market is nominally at 1.90c., Pittsburgh, this price appears to apply principally to small orders, as 1.85c. is openly quoted and good-sized lots will bring out 1.80c. Hot-rolled strip steel is firm at regular quotations, but mills are catching up as a result of a slowing down of the automobile industry, and some have orders for only two weeks' operations.

**Iron Ore.**—Ore on Lake Erie docks Jan. 1 amounted to 7,081,302 tons as compared with 7,346,037 tons on the same date a year ago. This is less than 2,000,000 tons greater than the dock balance of April 1, last, which was 5,096,204 tons. Shipments from Lake Erie ports during December were fairly heavy, amounting to 813,403 tons.

**Pig Iron.**—The market became more active the past week, following the holiday lull. Some business in foundry iron was booked for the second quarter and more inquiry has come out for that delivery. The second quarter sales reported are the first to be made by the Cleveland interests for that delivery, although some business had been booked previously for the entire first half. The second quarter orders were taken at the current market price of $20.50, Valley furnace, and $23, Detroit. While only one producer reports second quarter sales, another interest has indicated its willingness to take business for that delivery at the current prices. Sales by Cleveland interests during the week aggregated 15,000 tons. Three or four second quarter inquiries are pending for about 3000 tons and include one from central Ohio for 1000 tons. Quotations below $20.50, furnace, on foundry iron have disappeared in the Valley district, where one producer recently shaded that price to accumulate a backlog. A Cleveland furnace has booked a small lot for outside shipment at $21, but has no more iron of the base grade to offer for the first quarter, and has not yet opened its books for the second quarter. Ohio silvery iron is holding at the recent $1 a ton advance for the first quarter.

Quotations below, except on basic and low phosphorus iron, are delivered Cleveland, and for local iron include a 50c. switching charge. Ohio silvery and Southern iron prices are based on a $3.02 freight rate from Jackson and $6.01 from Birmingham:

| | |
|---|---|
| Basic, Valley furnace | $20.00 |
| N'th'n No. 2 fdy., sil. 1.75 to 2.25 | 22.26 |
| Southern fdy., sil. 1.75 to 2.25 | $27.01 to 28.01 |
| Malleable | 22.26 |
| Ohio silvery, 8 per cent | 33.52 |
| Standard low phos., Valley furnace | 28.00 to 28.50 |

**Semi-Finished Steel.**—Specifications have been coming out rather slowly on first quarter contracts, and the market has become easier from the standpoint of both supply and prices. The Youngstown district now has open tonnage which is being offered at $36 for sheet bars and $35 for slabs and large billets, these being the prices at which those mills took first quarter contracts. Consumers having contracts at $38, Youngstown, are particularly backward in specifying, and some have turned to other mills that will supply them material at lower prices. A northern Ohio consumer purchased 1000 tons of open-hearth sheet bars Monday at $36, Youngstown, for January shipment, and a Canton district mill bought a small lot at the same price. The McKinney Steel Co. has shut down its open-hearth department. Lack of specifications necessitated some curtailment, and the company announced that as some repair work had to be done, it was decided to close down all of the 14 furnaces. The company expects to resume its operations in about 10 days.

**Sheets.**—Specifications against first quarter contracts are rather light, particularly in galvanized sheets, and one of the Valley district mills has curtailed operations. Many consumers had low-priced fourth quarter contracts which were in excess of their requirements. The demand from the automotive industry, which has been light for a few weeks, has picked up somewhat the past few days. Regular quotations are being maintained by most of the mills, but concessions of $2 a ton to 3.25c., base Pittsburgh, are reported on black sheets.

**Fluorspar.**—Gravel fluorspar is firm at $17.50 at mines, but new buying is light. At present quotations domestic and foreign material are bringing the same delivered price in the Pittsburgh district. Increased imports during the greater part of 1925 indicated a 10 per cent gain for the year, but owing to a decline in the last two months they totaled about the same as in 1924.

**Bolts, Nuts and Rivets.**—After a quiet spell specifications on first quarter bolt and nut contracts have begun to come out in fair volume. The leading local maker of large rivets has closed first quarter contracts with practically all its customers at $2.60, Pittsburgh.

**Reinforcing Bars.**—New demand is still light. Prices on rail steel bars are unchanged at 1.80c. to 1.90c., Pittsburgh.

**Warehouse Business.**—An advance of $3 a ton in the warehouse prices on black and galvanized sheets and $2 a ton on blue annealed sheets has been made by a leading Cleveland jobber. Sheet prices out of stock were not advanced after the last advance in mill prices. Warehouse business is fair.

Jobbers quote steel bars, 3.10c. per lb.; plates and structural shapes, 3.20c.; No. 28 black sheets, 4.10c.; No. 28 galvanized sheets, 5.25c.; No. 10 blue annealed sheets, 3.25c.; cold-rolled rounds and hexagons, 3.90c.; flats and squares, 4.40c.; hoops and bands, 3.85c.; No. 9 annealed wire, $3 per 100 lb.; No. 9 galvanized wire, $3.45 per 100 lb.; common wire nails, $3 base per keg.

**Coke.**—By-product coke for domestic use was fairly active the past week. There is considerable demand in the East for this coke in the nut size, which is unchanged at $9, but the egg size has declined 50c. to $8, ovens. Foundry coke is unchanged at $5 to $6.50, ovens, for standard Connellsville brands.

**Old Material.**—The market has not yet shown any signs of recovery from the slump that set in before the holidays, but dealers look for some activity within the next week or two. Cleveland mills have not commenced

to release shipments that were held up in December. Dealers are also suspending shipments from producers whenever they can. However, some distress material is coming on the market, particularly heavy melting steel, which is being disposed of at bargain prices. This grade has declined about 50c. a ton, being quoted at $17 to $17.50, delivered to local mills. Borings and turnings have declined 25c., but these grades are firmer than steel-making material, as considerable blast furnace scrap is being taken by Detroit and Toledo furnaces. Prices on most grades are nominal.

We quote dealers' prices f.o.b. Cleveland per gross ton:

| | |
|---|---|
| Heavy melting steel | $16.50 to $17.00 |
| Rails for rolling | 16.75 to 17.00 |
| Rails under 3 ft. | 19.50 to 20.00 |
| Low phosphorus melting | 18.75 to 19.00 |
| Cast iron borings | 13.75 to 14.00 |
| Machine shop turnings | 13.25 to 13.75 |
| Mixed borings and short turnings | 13.75 to 14.00 |
| Compressed sheet steel | 15.50 to 16.00 |
| Railroad wrought | 14.50 to 15.00 |
| Railroad malleable | 20.00 to 20.50 |
| Light bundled sheet stampings | 12.50 to 12.75 |
| Steel axle turnings | 15.25 to 15.50 |
| No. 1 cast | 18.00 to 18.50 |
| No. 1 busheling | 13.75 to 14.00 |
| Drop forge flashings | 14.75 to 15.00 |
| Railroad grate bars | 13.75 to 14.00 |
| Stove plate | 13.75 to 14.00 |
| Pipes and flues | 11.50 to 12.00 |

# Philadelphia

## New Business Light But Steel Mills Have Heavy Rolling Schedules

PHILADELPHIA, Jan. 12.—Although new business in steel products is in much lighter volume than in the last two weeks of December, this is to be expected in view of the very heavy specifications received by the mills during the last two weeks of December, which have provided heavy rolling schedules for nearly all products. Deliveries on plates quoted by Eastern mills range from three to six weeks; some mills quote four to six weeks on shapes and on steel bars the deliveries are slightly longer, usually six to eight weeks. Specifications on January quotas of first quarter contracts are not beginning to come to the mills in volume, but these are expected in the latter two weeks of the month, as all consuming industries are running fully up to the December rate of operations. Steel prices show no changes. Plates are quoted by all Eastern mills at 1.80c., Pittsburgh, but on very desirable specifications it might be possible to shade this price $1 a ton. Some sales of black sheets at 3.25c., Pittsburgh, are reported.

Failure of the coal conference to bring about a settlement of the anthracite strike is accompanied by another flurry in the coke market, but the pig iron market, which has derived some of its strength from the coke situation, has turned slightly weaker, and there are reports of sales of $22.50, furnace, for foundry iron. A purchase of 30,000 tons of steel scrap by the leading Eastern steel company at $17.50, delivered, has added no strength to the scrap market, which, in fact, has weakened slightly.

**Ferroalloys.**—Importers and the domestic producer of ferro-manganese continue to quote $115, seaboard or furnace. Demand is very light.

**Billets.**—Eastern mills continue to quote $36, Pittsburgh, on rerolling billets and $41 on forging billets, but there are few sales.

**Pig Iron.**—There are persistent reports of quotations of $22.50, base, furnace, on foundry iron, a concession of 50c. a ton from prices recently prevailing. Such sales have been denied by some of the leading Eastern producers. The recent blowing in of the Mary furnace of the Reading Iron Co. at Hokendauqua, Pa., has made additional foundry iron available for the Eastern market, and this, together with large receipts of foreign iron, has at least given an appearance of easier conditions from the buyer's viewpoint. European foundry grades are being sold at $21 to $22, Philadelphia, duty paid. The Baldwin Locomotive Works has bought 6000 tons of low phosphorus iron at approximately $24, furnace. An Eastern steel company has bought a few thousand tons of basic iron at a reported price of $23, delivered.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rates varying from 76c. to $1.63 per gross ton:

| | |
|---|---|
| East. Pa. No. 2 plain, 1.75 to 2.25 sil. | $23.76 to $24.13 |
| East. Pa. No. 2X, 2.25 to 2.75 sil. | 24.26 to 24.63 |
| East. Pa. No. 1X | 24.76 to 25.13 |
| Virginia No. 2 plain, 1.75 to 2.25 sil. | 27.67 to 28.67 |
| Virginia No. 2X, 2.25 to 2.75 sil. | 28.17 to 29.17 |
| Basic, delivered eastern Pa. | 23.00 to 23.50 |
| Gray forge | 23.00 to 23.50 |
| Malleable | 24.00 to 25.00 |
| Standard low phos. (f.o.b. furnace) | 23.00 to 24.00 |
| Copper bearing low phos. (f.o.b. furnace) | 24.00 |

**Plates.**—Eastern plate mills have fairly full rolling schedules, mostly as the result of the heavy specifications of late December. One or two mills are quoting deliveries of six weeks on sheared plates and five weeks on universal plates. Quotations by Eastern mills are now uniformly 1.80c., Pittsburgh, but on desirable specifications this price would be shaded by one or two mills $1 a ton.

**Structural Shapes.**—The largest structural award in some weeks in this district is 2600 tons for a seminary at Overbrook, Pa., which will be fabricated by the McClintic-Marshall Co. The run of small orders is fairly good, although not up to the December rate of buying. The market quotation continues to be 1.90c., Pittsburgh, but on some desirable lots this is being shaded $1 or $2 a ton, although such concessions are said to be less frequent.

**Bars.**—The market continues firm at 2c., Pittsburgh, for steel bars. Mills have good rolling schedules ahead and deliveries extend from six to eight weeks in most instances. The volume of new buying is small. Disposition of 3000 tons of concrete reinforcing bars for piers at Mobile, Ala., has not been announced here. A local importer of foreign steel put in a bid on imported bars, but the information here is that the steel will probably be rolled by an American mill. Bar iron remains at 2.22c., Philadelphia.

**Sheets.**—Except for occasional concessions of $2 a ton on black sheets, the sheet market remains fairly firm. As in other rolled products, the new business so far in January has not been up to the December rate of buying.

**Warehouse Business.**—Prices as quoted by local warehouses for steel products out of stock are fairly steady except on steel bars, on which concessions are offered. Business is in fair volume. For local delivery quotations are as follows:

Soft steel bars and small shapes, 3.20c. per lb.; iron bars (except bands), 3.20c.; round edge iron, 3.50c.; round edge steel, iron finished, 1½ x ½ in., 3.50c.; round edge steel, planished, 4.30c.; tank steel plates, ¼-in. and heavier, 2.80c. to 3c.; tank steel plates, ⅛-in., 3c.; blue annealed steel sheets, No. 10 gage, 3.50c.; black sheets, No. 28 gage, 4.65c.; galvanized sheets, No. 28 gage, 5.85c.; square, twisted and deformed steel bars, 3c.; structural shapes, 2.75c. to 2.90c.; diamond pattern plates, ¼-in., 5.30c.; ⅜-in., 5.50c.; spring steel, 5c.; rounds and hexagons, cold-rolled steel, 4c.; squares and flats, cold-rolled steel, 4.50c.; steel hoops, 4.25c., base; steel bands, No. 12 gage to ⅞-in., inclusive, 3.90c.; rails, 3.20c.; tool steel, 8.50c.; Norway iron, 6.50c.

**Imports.**—Pig iron imports at Philadelphia in the week ended Saturday were 2829 tons, of which 869 tons came from India, 800 from the Netherlands, 660 from Luxemburg and 500 from Germany. Chrome ore from Portuguese Africa was imported in the amount of 3800 tons, and 500 tons came from British India. Steel bars from the Netherlands amounted to 480 tons.

**Old Material.**—The leading Eastern steel company has bought 30,000 tons of steel scrap at $17.50, delivered, but this has not given strength to the Eastern scrap market. The market, in fact, is slightly weaker and brokers are more willing to sell tonnages at the prevailing quotations, believing that prices have reached their peak on this movement, barring some such development as interference with railroad shipments due to snow or cold weather. The fact that this has been an open winter and that nearly all grades of scrap are plentiful have militated against the rise which brokers and dealers were confident would come.

Sales of stove plate for steel plant use have been made at $15.50, which singles this grade out as the only one showing any real strength.

We quote for delivery, consuming points in this district, as follows:

| | |
|---|---|
| No. 1 heavy melting steel | $17.50 to $18.00 |
| Scrap rails | 17.00 to 17.50 |
| Steel rails for rolling | 18.50 to 19.00 |
| No. 1 low phos., heavy, 0.04 per cent and under | 22.00 to 22.50 |
| Couplers and knuckles | 21.00 to 21.50 |
| Rolled steel wheels | 21.00 to 21.50 |
| Cast iron car wheels | 18.50 to 19.00 |
| No. 1 railroad wrought | 18.50 to 19.00 |
| No. 1 yard wrought | 17.00 to 17.50 |
| No. 1 forge fire | 15.50 to 16.00 |
| Bundled sheets (for steel works) | 14.50 to 15.00 |
| Mixed borings and turnings (for blast furnace) | 14.00 to 14.50 |
| Machine shop turnings (for steel works) | 14.50 to 15.00 |
| Machine shop turnings (for rolling mill) | 15.00 to 15.50 |
| Heavy axle turnings (or equivalent) | 15.50 to 16.00 |
| Cast borings (for steel works and rolling mill) | 14.50 to 15.00 |
| Cast borings (for chemical plant) | 17.00 to 17.50 |
| No. 1 cast | 18.50 to 19.50 |
| Heavy breakable cast (for steel works) | 17.50 to 18.00 |
| Railroad grate bars | 15.00 to 15.50 |
| Stove plate (for steel works) | 15.00 to 15.50 |
| Wrought iron and soft steel pipes and tubes (new specifications) | 16.50 to 17.00 |
| Shafting | 23.00 to 24.00 |
| Steel axles | 24.00 to 25.00 |

## Machine Tool Prospects

Business in machine tools is now around 200 per cent of the average shipments for the three years of 1922, 1923 and 1924, according to the monthly review of the National Machine Tool Builders' Association. As noted in connection with the reproduction elsewhere in this issue of the revised barometer index of the industry, the crest of the present buying movement will come in the spring, if the crest has not already been reached. The point is emphasized, however, that demand for machine tools probably will not fall off any more suddenly than in 1923. Then orders kept considerably above the base line for a number of months, though they showed a declining tendency. The most significant thing for the tool builders to watch, it is believed, is the course of orders from the automobile industry, which are not likely to be as heavy as they have been recently.

## Wants to Intervene in Lake Cargo Coal Case

WASHINGTON, Jan. 12.—In a petition by the Public Service Commission of Pennsylvania, filed with the Interstate Commerce Commission yesterday, request is made for permission for the State commission to intervene in the Lake cargo coal case, and for its reopening and reargument. Among other things, the Pennsylvania commission's petition says that the reversal in the relative position of the rates on coal and ex-Lake ore justifies the view that rates on coal from the Pittsburgh district to Lake Erie ports are unreasonably high. Coal producers in the Pittsburgh and eastern Ohio districts contend that the decision in the Lake cargo coal case is preferential to West Virginia and Kentucky mines.

## Western Wire Merger Fails

The merger plan which was submitted to the stockholders of the Keystone Steel & Wire Co., Peoria, Ill., and the Kokomo Steel & Wire Co., Kokomo, Ind., has been definitely abandoned. B. L. Sommer, president Keystone Steel & Wire Co., states that it is not known at this time whether further negotiations will be made to merge the two properties.

"Thermal Expansion of Tungsten" is the title of scientific paper No. 515 of the Bureau of Standards. It discusses the results of an investigation on the thermal expansion of tungsten (99.98 per cent) over various temperature ranges between — 100 and + 500 deg. C.

# REINFORCING STEEL

## Awards of 2300 Tons and 4100 Tons Pending Including Mobile Job of 3000 Tons

A number of small concrete reinforcement jobs taking a total of about 2300 tons of steel bars are reported as having been closed in the past week. Projects pending, including 3000 tons for piers at Mobile, Ala., total about 4100 tons. The awards follow:

Elks' Club, Brooklyn, N. Y., 150 tons, to Joseph T. Ryerson & Son.

Section of New York-New Jersey vehicular tunnel, 350 tons, divided between Igoe Brothers and Fireproof Products Co.

Barlum Hotel, Detroit, 400 tons to McRae Steel Co.

High school, North Shore Avenue and Bosworth Street, Chicago, 460 tons, to Olney J. Dean & Co.

Elgin Clock Co., Elgin, Ill., factory building, 125 tons, to Joseph T. Ryerson & Son.

Public school, Milwaukee, 330 tons, to Concrete Engineering Co.

Sportsman Park, St. Louis, addition to grandstand, 190 tons; McCrory Stores, St. Louis, 100 tons; Paul Brown Building, St. Louis, 200 tons, all to Laclede Steel Co.

Henry Durant School, San Francisco, 210 tons, to unnamed local jobber.

Kress department store, Oakland, Cal., 180 tons, to Steel Service Co., San Francisco.

Sunset Printing Co., San Francisco, 240 tons, to unnamed local jobber.

Hotel, Monterey, Cal., 100 tons, to Truscon Steel Co., San Francisco.

### Reinforcing Bars Pending

Inquiries for reinforcing steel bars include the following:

Chevrolet Motor Co., garage, New York, 250 tons.

Section of New York subway, 150 tons; general contract awarded to Booth & Flinn, Ltd., New York.

Alliance State Bank, Chicago, 180 tons.

Central Wholesale Groceries, Fairfield and Taylor Streets, Chicago, 100 tons; J. T. Herter, architect.

Merchants National Bank, Michigan City, Ind., 100 tons.

Illinois State road work, Springfield, Ill., 500 tons.

Cleveland Tower Building, Cleveland, tonnage being estimated; Graham, Anderson, Probst & White, architects.

Piers, Mobile, Ala., 3000 tons.

## Columbia Steel and Forged Steel Wheel Companies Combine

PITTSBURGH, Jan. 12.—The interests of the Columbia Steel Co., Elyria, Ohio, and the Forged Steel Wheel Co., Pittsburgh, have been combined. The present management of the Columbia Steel Co., including H. M. Naugle, president; A. J. Townsend, vice-president and general manager, and K. R. Jenson, will be in charge of the combined properties and their policies as regards production and distribution will be continued. Sufficient finishing equipment to assure control over every operation entering into the production of hot and cold rolled strip steel will be installed. A product known as strip sheet will be placed on the market as soon as special mills can be erected and put into operation.

The manufacture of forged steel wheels, for railroad equipment, the product of the Forged Steel Wheel Co., will be continued at the Butler, Pa., plant, and the manufacture and selling of this product will be handled by the same organization as in the past.

## Shipping Board Wishes to Build Large Passenger Ships

WASHINGTON, Jan. 12.—The Shipping Board shortly will request Congress for authority to build two large modern passenger vessels to be used to supplement the limited number of such vessels now under the American flag. Plans and specifications have recently been prepared for a passenger vessel to be 726 feet long and with an estimated displacement of 44,500 tons.

# FABRICATED STEEL

## Reviving Building Work Indicated by Week's Awards of 45,000 Tons

Many of the structural steel projects which were pending at the end of 1925 are being closed, the total for the week being more than 45,000 tons, indicating, as has been predicted, a continuation of the large construction activities of last year. Outstanding among the awards was one of 5000 tons for 10 barges for the Inland Waterways Corporation and one of 4000 tons for a blast furnace to be built for the Weirton Steel Co., Weirton, W. Va. There were more than a dozen other awards each exceeding 1000 tons. The awards follow:

Loft building, 323-327 West Thirty-seventh Street, New York, 500 tons, to Harris Structural Steel Co.

Theater, Clinton and Suffolk Streets, New York, 140 tons, to Harris Structural Steel Co.

Highway bridge, Stockton, N. J., 800 tons, to American Bridge Co.

Florida East Coast Railroad, shops at St. Augustine, Fla., 2200 tons, to Virginia Bridge & Iron Co.

Emergency Aid Hospital, Philadelphia, 800 tons, to McClintic-Marshall Co.

Lehigh Valley Railroad, bridges, 750 tons, to Bethlehem Steel Corporation; 350 tons, to American Bridge Co.

Baltimore & Ohio Railroad, bridges, 1150 tons, to American Bridge Co.

Pennsylvania Railroad, bridges, 125 tons, to Phoenix Bridge Co.

United Gas Improvement Construction Co., Philadelphia, transmission towers, 325 tons, to Archibald Brady Co.

Frederick L. Cranford Co., steel work for traveling cranes, 300 tons, to National Bridge Works.

City of Baltimore, viaduct, 950 tons, to Bethlehem Steel Corporation.

New York subways, section 2, route 102, 2850 tons, to McClintic-Marshall Co.

Young Women's Christian Association building, Washington, D. C., 650 tons, to Barber & Ross.

Home for Aged Women, Boston, 253 tons, to New England Structural Co.

Philadelphia Rubber Works, Philadelphia, 600 tons, to Fort Pitt Bridge Works.

International Nickel Co., Huntington, W. Va., factory, 110 tons, to McClintic-Marshall Co.

Willys-Overland Co., Toledo, forge shop, 1500 tons, to Jones & Laughlin Steel Corporation.

Duquesne Light Co., Pittsburgh, 10 barges, 1150 tons, to Dravo Contracting Co., Pittsburgh.

Inland Waterways Corporation (Federal barge line), Warrior River service, 10 barges, 5000 tons, to Dravo Contracting Co.

Miami Gas Co., Miami, Fla., 2,000,000-cu. ft. gas holder, 1300 tons, to Cruse-Kemper Co., Ambler, Pa.

Mengel Co., Louisville, 220 tons, to Louisville Bridge & Iron Co.

Mobile Bay Bridge, Mobile Bay, Ala., 800 tons, to Virginia Bridge & Iron Co.

Gas holder, New Orleans, 1500 tons, to Cruse-Kemper Co., Ambler, Pa.

Good Samaritan Hospital, Cincinnati, 150 tons, to J. E. Moss Iron Works, Wheeling, W. Va.

Office building, Michigan Avenue and Lake Street, Chicago, 2050 tons, to McClintic-Marshall Co.

Pere Marquette Hotel, Peoria, Ill., 2000 tons, to Mississippi Valley Structural Steel Co.

Rock Island & Pacific Railway Co., track elevation bridges at Chicago, 1075 tons, to McClintic-Marshall Co.

Elizabeth Arden apartment hotel, Chicago, 600 tons, to Gage Structural Steel Co., Chicago.

A. H. Blank Theater Corporation, Omaha, Neb., theater, 550 tons, to Omaha Structural Steel Works.

Office building, California and Montgomery Streets, San Francisco, 1800 tons, to United States Steel Products Co.

Vantage Ferry bridge across Columbia River on North Central Highway, Wash., 1500 tons, to United States Steel Products Co.

David Spencer department store addition, Vancouver, B. C., 1600 tons, to Vulcan Iron Works, Vancouver.

Columbia Steel Corporation, Pittsburg, Cal., mill buildings, 164 tons, to Pacific Coast Engineering Co., Oakland, Cal.

Famous Players Theater, San Antonio, Tex., 380 tons, to Virginia Bridge & Iron Co.

Y. M. C. A. building, Glendale, Cal., 100 tons, to McClintic-Marshall Co.

Steilacoomb State Hospital, Wash., 112 tons, to Puget Sound Iron & Steel Co.

Weirton Steel Co., blast furnace, Weirton, W. Va., 4000 tons, to McClintic-Marshall Co.

St. Charles Seminary, Overbrook, Pa., 2600 tons, to McClintic-Marshall Co.

Philadelphia Rubber Works, Oakes, Pa., 550 tons, to Fort Pitt Bridge Co.

United Gas Improvement Co., office building, Philadelphia, 1700 tons, to McClintic-Marshall Co.

### Structural Projects Pending

Inquiries for fabricated steel work include the following:

New York subways, section 5, route 102, 5950 tons; bids close Jan. 22.

Southern Railway, station at Greensboro, N. C., 800 tons.

Pennsylvania Railroad, bridges, 500 tons.

Thirty-fifth Ward Hospital, Philadelphia, 350 tons.

Hotel, 112 West Fifty-ninth Street, New York, 2000 tons.

Phoenix-Yuma Bridge across Gila River in Maricopa County, Ariz., 1000 tons.

Roanoke Building, Chicago, addition, 3000 tons.

Bridge over Siletz River on Roosevelt Coast Highway, near Kernville, Ore., 170 tons; bids close Jan. 19, State Highway Commission, Portland, Ore.

Gresham, Ore., stand pipe, 100 tons; bids close Jan. 13.

Department of the Interior, Bureau of Reclamation, Yakima, Wash., Kittitas Division of Yakima irrigation project, 2750 tons; no date set for bids.

John W. Watson Co., Philadelphia, manufacturing building, 600 tons.

Cooper Hospital, Camden, N. J., 150 tons.

Indiana war memorial, Indianapolis, 1000 tons, for foundation work.

Cleveland Union Terminal Co., Cleveland, Columbus Road viaduct, 200 tons.

# RAILROAD EQUIPMENT

## The Union Pacific and Baltimore & Ohio Each Order 2000 Freight Cars

**The Union Pacific System and the Baltimore & Ohio Railroad have each ordered 2000 freight cars and the New York Central has placed an additional 500 automobile box cars. These with a few small orders make the total of freight cars ordered within the week 4615. The Union Pacific and B. & O. also ordered passenger equipment. The orders of the week are given in detail as follows:**

The Union Pacific System has ordered 2000 freight cars and 47 passenger, baggage and mail cars. The freight cars were divided as follows: 500 ballast cars to the Pullman Car & Mfg. Corporation; 500 Hart convertible ballast cars to the American Car & Foundry Co.; 700 automobile box cars to the General American Car Co.; 300 automobile box cars to the Bettendorf Co. The Pullman Car & Mfg. Corporation was awarded orders for 15 passenger coaches, 10 observation cars and 5 dining cars, the American Car & Foundry Co. receiving orders for 10 steel baggage cars, 5 horse, baggage and automobile cars and 2 baggage and mail cars. The railroad has announced that its purchases of equipment for delivery in the first half of the year will total $9,500,000. Twenty-five locomotives are to be purchased.

The Standard Steel Car Co., has received an additional order for 500 automobile box cars from the New York Central Lines.

The Florida East Coast Railroad has ordered 10 mountain type locomotives from the American Locomotive Co.

The Missouri Pacific Railroad has asked for bids for the repair of 600 freight cars, and is inquiring also for 50 70-ton gondola cars.

The Chicago, Burlington & Quincy has ordered 25 suburban coaches from the Bettendorf Co.

The Baltimore & Ohio has closed on 2000 freight cars and 73 passenger class cars, dividing the freight cars equally between the Bethlehem Steel Co. and the Standard Steel Car Co.

The Delaware, Lackawanna & Western ordered 25 caboose cars from the Magor Car Co. and 40 milk cars from the Standard Steel Car Co.

The Kansas City, Mexico & Orient will build 50 box cars in its own shops.

The New York, Chicago & St. Louis placed 200 freight car steel underframes with the Pressed Steel Car Co.

The Union Pacific ordered 9 3-cylinder overland locomotives from the American Locomotive Co.

# NON-FERROUS METALS

## The Week's Prices

Cents per Pound for Early Delivery

| | Copper, New York | | Straits Tin (Spot) | Lead | | Zinc | |
|---|---|---|---|---|---|---|---|
| Jan. | Lake | Electrolytic* | New York | New York | St. Louis | New York | St. Louis |
| 6..... | 14.25 | 13.87½ | 63.12½ | 9.25 | 9.00 | 9.05 | 8.70 |
| 7..... | 14.25 | 13.87½ | 62.87½ | 9.25 | 9.00 | 9.05 | 8.70 |
| 8..... | 14.25 | 13.87½ | 62.62½ | 9.25 | 9.00 | 9.05 | 8.70 |
| 9..... | 14.25 | 13.87½ | ... | 9.25 | 9.00 | 9.05 | 8.70 |
| 11..... | 14.25 | 13.87½ | 62.25 | 9.25 | 9.00 | 9.05 | 8.70 |
| 12..... | 14.25 | 13.87½ | 62.75 | 9.25 | 9.00 | 9.05 | 8.70 |

*Refinery quotation; delivered price ¼c. higher.

## New York

NEW YORK, Jan. 12.

December data for the copper and zinc industries have just been published and both markets are quiet and firm. Easing prices for tin have been accompanied by moderate buying. Conditions in the lead market are practically unchanged.

**Copper.**—Statistics for the month of December, made public today, indicate only a slight increase in the copper available as refined and in the form of blister—1400 tons in excess of the stocks as of Nov. 30. There has of course been no response to this feature thus far, but the tone of the market is stiff and prices are quite firm. One producer states that about 4,000,000 tons from domestic sources was in the market yesterday and the outlook for further inquiry is good. Sales in the week have been moderate. More interest is indicated in export business and some sales are reported for as far ahead as February and March. The minimum quotation for electrolytic copper is 14.12½c., delivered in the Connecticut Valley, through March, but there are some producers whose books are in such condition that they will not take less than 14.25c. Lake copper is quoted at 14.25c., delivered.

**Tin.**—Due to lack of demand and some pressure to sell, prices have fallen nearly 1c. per lb. during the week and as a consequence there have been some fairly good sales. For the week ended with Friday, Jan. 8, about 1000 tons had been disposed of, the largest sales being made on Thursday when 800 tons was the total. Consumers took the largest proportion, most of it involving January-February arrivals. One London house was eager for business at prices somewhat lower than it usually desires. Yesterday 200 tons was disposed of and today the market was only moderately active with spot Straits tin quoted at 62.75c., New York. London prices today were about £3 per ton less than a week ago, with spot standard quoted at £285 10s., future standard at £278 5s. and spot Straits at £286 15s. The Singapore price was £283. Arrivals thus far this month have been 1975 tons, with 5670 tons reported afloat.

**Lead.**—A moderate business is reported as being done almost every day, but prompt metal is difficult to obtain, most of it being disposed of. Prices continue firm and with very little change. The quotation of the leading interest is still 9.25c., New York, as its contract price. The outside market prices range from 9.10c. to 9.20c., St. Louis, or 9.45c. to 9.55c., New York.

**Zinc.**—The statistics of the American Zinc Institute for December show a slight increase in stocks in smelters' hands as of Dec. 31. Total stocks on that day were 9295 net tons, an increase of 2373 tons over November. The real significance, however, lies in the fact that on Jan. 1, 1925, the stocks were 18,996 tons, or over twice those on Jan. 1, this year. The feature of the market continues to be the scarcity of metal for early delivery, which commands a premium over that for nearby delivery. Prime Western zinc for spot delivery is quoted at 8.70c. to 8.75c., St. Louis, or 9.05c. to 9.10c., New York, with January and early February delivery at 8.70c., St. Louis, or 9.05c., New York. February shipment is held at 8.60c., St. Louis, or 8.95c., New York. Only a moderate amount of business is reported with very little demand for export.

**Nickel.**—The International Nickel Co. on the first of January advanced prices of its products 1c. per lb. Wholesale lots of ingot nickel are quoted at 35c. with shot nickel at 36c. and electrolytic nickel at 39c. per lb.

**Antimony.**—Due to sales by speculators who desire to take their profits, prices for Chinese metal are a little easier with spot and January delivery, as well as January-February arrival, quoted at 24.25c., New York, duty paid. Shipments from China in January-February are quoted at 24c.

**Aluminum.**—The Aluminum Co. of America reduced its price of virgin metal, 98 to 99 per cent pure, early this month 1c. per lb., to 27c. delivered.

**Old Metals.**—The uncertain movements in the new metal market keep scrap prices moving up and down. The changes are usually small but the effect on business is bad. Dealers' selling prices, in cents per lb., are as follows:

| | |
|---|---|
| Copper, heavy and crucible | 13.50 |
| Copper, heavy and wire | 13.00 |
| Copper, light and bottoms | 11.75 |
| Heavy machine composition | 10.00 |
| Brass, heavy | 9.00 |
| Brass, light | 8.00 |
| No. 1 red brass or composition turnings | 9.25 |
| No. 1 yellow rod brass turnings | 9.50 |
| Lead, heavy | 8.50 |
| Lead, tea | 7.00 |
| Zinc | 5.75 |
| Cast aluminum | 21.50 |
| Sheet aluminum | 21.50 |

## Chicago

JAN. 12.—Copper and lead are unchanged in a steady market. Zinc has advanced slightly in a stronger market. A substantial buying movement and low stocks have resulted in an advance in antimony. Tin is quoted lower in a market without feature. Used metals are unchanged and quiet. We quote, in carload lots: Lake copper, 14.25c.; tin, 63c.; lead, 9.25c.; zinc, 8.85c.; in less than carload lots, antimony, 26c. On old metals we quote copper wire, crucible shapes and copper clips, 11c.; copper bottoms, 9.25c.; red brass, 9c.; yellow brass, 8c.; lead pipe, 8c.; zinc, 5.25c.; pewter, No. 1, 37c.; tin foil, 44c.; block tin, 52c.; all being dealers' buying prices for less than carload lots.

## Non-Ferrous Rolled Products

No change has been made in the quotations on brass and copper rolled products since Dec. 16. Zinc and full lead sheets have not been changed in three weeks. For New York warehouse prices see page 196.

**List Prices Per Lb., f.o.b. Mill**

*On Copper and Brass Products, Freight Up to 75c. Per 100 Lb. Allowed on Shipments of 500 Lb. or Over*

| | |
|---|---|
| *Sheets* | |
| High brass | 19⅛c. |
| Copper, hot rolled | 22½c. |
| Zinc | 12c. |
| Lead (full sheets) | 13c. |
| *Seamless Tubes* | |
| High brass | 23¾c. |
| Copper | 24½c. |
| *Rods* | |
| High brass | 16¾c. |
| Naval brass | 19⅝c. |
| *Wire* | |
| Copper | 16¼c. |
| High brass | 19⅝c. |
| *Copper in Rolls* | 21⅜c. |
| *Brazed Brass Tubing* | 27⅛c. |

## To Build Centerless Grinding Machines

The Rogers Grinding Machine Co., Bantam, Conn., has been incorporated to build a centerless grinder of new design. The company is capitalized at $100,000 and the officers are: W. S. Rogers, chairman of the board of directors of the Bantam Ball Bearing Co., Bantam, Conn., president; A. L. Shipman, vice-president, and Mrs. N. S. Rogers, secretary and treasurer.

The machine, which will be built in a variety of sizes, is arranged so that the work is ground between wheels mounted vertically, the work being fed through the wheels from above by gravity.

## PERSONAL

W. La Coste Neilson, vice-president and general sales manager Norton Co., Worcester, Mass., manufacturer of grinding machines and grinding wheels, sailed Saturday on the Berengaria for Europe to study business conditions there. Last week Harry N. Harding, the company's European traveler, sailed on the De Grasse, accompanied by Pierre Baruzy, sales manager of the Compagnie de Meules Norton, the Norton Co.'s French subsidiary. Mr. Baruzy had been in this country about two months.

—

Otto Kleyer, of the Adler Works, Frankfort, Germany, manufacturer of automobiles, has arrived in New York to attend the annual automobile show, after which he will tour the country, visiting plants of automobile companies and machine tool builders. He intends making purchases of shop equipment while here.

—

Otto S. Schlich has opened offices at 136 Liberty Street, New York, as engineer and architect specializing in industrial plants.

—

K. L. Hardy, former treasurer Van Dorn Iron Works Co., Cleveland, has been elected vice-president of that company to succeed J. P. Van Dorn, who has retired. C. O. Fishel has succeeded Mr. Hardy as treasurer.

—

Carmi A. Thompson, of the M. A. Hanna Co., Cleveland, has been elected president Becker Steamship Co., Cleveland, succeeding William I. Becker, who has resigned.

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C. E. Cole has resigned as superintendent of the Ohio & Western Pennsylvania Dock Co., Cleveland, which operates the Pennsylvania Railroad ore dock and ore unloading plant in that city. He had held the position for more than 20 years.

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M. A. Herald has resigned as sales representative, Standard Tank Car Co., Sharon, Pa., and has organized the United Car & Equipment Co., with offices at 300 Westinghouse Building, Pittsburgh. In addition to operating the United Tank Line, the company will be the representative of the Union Draft Gear Co., the Universal Draft Gear Attachment Co. and other companies dealing in new and used railroad cars and equipment.

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Arthur G. Henry, formerly metallurgist Perfection Tool Hardening Co., has been appointed chief metallurgist at the Chicago plant of Danly Machine Specialties, Inc. Mr. Henry is considered an authority on carbonizing and hardening of steels.

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James A. Cook has been appointed Pittsburgh district manager of sales, Union Drawn Steel Co., Beaver Falls, Pa., succeeding J. B. Jamison, who resigned recently to become general manager of sales Superior Steel Products Co., Beaver Falls.

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J. W. Dowling, who has become associated with the General Refractories Co. in its Pittsburgh office, has been active in sale of refractories for many years, having been identified with the Big Savage Fire Brick Co., Frostburg, Md., and the Superior Silica Brick Co., Tyrone, Pa.

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G. S. Evans, metallurgist Mathieson Alkali Works, New York, will be the speaker at the monthly meeting and dinner of the Pittsburgh Foundrymen's Association at the Fort Pitt Hotel, Pittsburgh, Monday evening, Jan. 18. His subject will be "Uses of Alkali in Cupola Practice."

E. N. Kelly, who has been in charge of the Pittsburgh office, Southwest Supply Co., Bartlesville, Okla., has resigned to become Pittsburgh district representative of A. O. Smith Corporation, Milwaukee, which has opened an office at 1628 Oliver Building, in the sale of Smithsteel couplings. J. W. Larner, for several years in the Pittsburgh office of the Wheeling Steel Corporation, succeeds Mr. Kelly with the Southwest Supply Co.

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Maj. A. A. Wedderspoon, who has been attached to the Pittsburgh office of the General Refractories Co., has been appointed Indiana district sales manager, with headquarters at 419 Continental Bank Building, Indianapolis.

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M. J. Miller has been appointed superintendent Fremont Foundry Co., Fremont, Ohio, succeeding the late W. J. Hawn, who died Nov. 26. Mr. Miller's father, C. J. Miller, is one of the oldest men in the foundry business, in point of years of service.

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William L. Kilcoin, Olean, N. Y., has been appointed assistant trade commissioner in the Bureau of Foreign and Domestic Commerce, Department of Commerce. He will be assigned to the Johannesburg, South Africa, office.

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Thomas E. Doyle, for many years president Dravo-Doyle Co., merchant engineer, Pittsburgh, Cleveland, Philadelphia and Indianapolis, retired on Jan. 1. Mr. Doyle will continue his connection with the company as special agent. The following executive officers have been elected: J. D. Berg, president; H. B. Mann, S. P. Felix and W. K. Fitch, vice-presidents.

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W. O. Whitney has been appointed sales manager Maxim Silencer Co., Hartford, Conn., manufacturer of silencers for industrial machinery, effective Jan. 1. Mr. Whitney was formerly with the Brunswick-Kroeschell Co., New Brunswick, N. J., manufacturer of refrigerating machinery. For the last 10 of his 16 years with that firm Mr. Whitney was manager of marine department sales.

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A. Q. Moffatt, for many years associated with the Wheeling Corrugating Co., has assumed his new duties as sales manager, stove pipe department, W. E. Lamneck Co., Columbus, Ohio.

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Edward Ehlers, president Rockaway Rolling Mill Rockaway, N. J., manufacturer of merchant refined iron and steel, and treasurer Bronx Iron & Steel Co., New York, after an absence of about eight weeks, during which time he underwent a serious operation, has recovered sufficiently to resume his duties.

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Dr. R. S. Williams, professor of metallography at Massachusetts Institute of Technology, Cambridge, Mass., was scheduled to speak before the Providence section of the American Society for Steel Treating, Jan. 13, at Providence, R. I., on hardening, drawing or tempering and toughening.

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Marcus K. Bryan and R. A. Moncrieff, who have been connected with the organization of Charles T. Main, engineer, 200 Devonshire Street, Boston, for some time, became associates on Jan. 1, in addition to F. M. Gunby, H. E. Sawtell, J. F. Osborn, W. F. Uhl, C. R. Main and A. W. Benoit.

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Leonard C. Crewe, general manager Robesonia Iron Co., Stephen Girard Building, Philadelphia, has been appointed vice-president in charge of operations and elected a director of the company. Mr. Crewe formerly was president LaFollette Coal & Iron Co., LaFollette, Tenn. He has had a long and thorough experience in the manufacture of iron and steel, having served the Maryland Steel Co., Dominion Iron & Steel Co., Illinois Steel Co., and others. He will have full charge of operations and will handle all matters pertaining to

the purchase of raw materials and supplies. As heretofore, his office will be located at Robesonia, Berks County, Pa.

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O. B. Iles, president International Machine Tool Co., Indianapolis, will leave Jan. 15 for a three months' business trip to European countries. He will study machine tool conditions in Italy, Germany, France and England.

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George H. Charls has been elected president United Alloy Steel Corporation, Canton, Ohio, and L. G. Pritz, vice-president and general manager. Edward A. Langenbach, chairman of the board of directors and also president of the corporation, resigned the latter office in favor of Mr. Charls, who has for four years filled the position of vice-president and general manager. Mr. Charls is just completing his twenty-fifth year of experience in the steel business, during which time, after two years spent in the operating department of the American Rolling Mill Co., he filled the positions of shipping, order and invoice clerk, assistant cashier, traffic manager, salesman, assistant sales manager, sales manager and assistant secretary, vice-president and management committee—all with the American Rolling Mill Co., with which company he spent 17 years. For four years he was vice-president and general manager Stark Rolling Mill Co. and Berger Mfg. Co., now merged with United Alloy Steel Corporation, and for four years vice-president and general manager United Alloy Steel Corporation. During this entire period Mr. Charls has directed his efforts to the manufacture and sale of specialty high-grade iron and steel. It was through his efforts that pure iron was manufactured in the open-hearth furnace. He has long been a recognized authority on the corrosion of iron and steel and is the patentee of Toncan copper-molybdenum rust-resisting iron and of a special acid-resisting chrome-silicon steel. The present employee stockholder plan now in effect with United Alloy Steel Corporation, which he created, is recognized as one of the most practical and feasible labor plans now in use in the steel industry. He negotiated the purchase of the plant of the Hydraulic Steel Co., which has since been converted into a specialty sheet manufacturing unit. L. G. Pritz, vice-president in charge of operations, who has been selected to assume the duties of vice-president and general manager, started in the steel business with the Illinois Steel Co., devoting his time to the production of high-grade alloy steels. He left that company to take charge of the steel plant of the Timken Roller Bearing Co., Canton, Ohio, where he introduced new methods for producing bearing steel. He then became vice-president in charge of operations at the Sizer Forge Co., Buffalo, in the production of fine tool, die block and alloy steels. He has been with United Alloy Steel Corporation for a year and a half. Mr. Pritz is recognized as a competent authority on the production of alloy steels of all kinds, his experience having covered the manufacture of every type of alloy steel now being used.

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H. V. Morse has given up his active connection with the Morse-Rogers Steel Co., Cleveland, although he still retains the vice-presidency of that company, and has opened an office at 642 Rockefeller Building, to deal in sheet and strip steel seconds.

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E. D. Giberson, president of E. D. Giberson & Co., iron and steel, 40 Rector Street, New York, will sail Jan. 16 on a business trip through France, England and Germany. His trip is in connection with European steel interests for which the company is agent, including August Thyssen & Co. of Germany, represented by them in the United States and the German Tube Syndicate, which they represent in Cuba.

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Ralph W. Clark, vice-president Pilling & Co., Inc., New York, has returned from a three weeks' pleasure trip to the Pacific Coast and Southern points.

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J. B. Cueman, secretary Rogers, Brown & Crocker Brothers, Inc., New York, has resigned.

## OBITUARY

RICHARD ELLIS BEBB, chairman of the board of directors of the Central Steel Co., Massillon, Ohio, of which he was the founder and a long-time president, brief mention of whose death, Jan. 5, in the University Hospital, Philadelphia, of heart disease, was made last week, was first stricken about three years ago. Because of his physical condition he relinquished the presidency of the company a year later and became chairman of the board. Since his retirement from the presidency he had devoted little attention to the business outside of executive matters and attendance at board meetings. Mr. Bebb occupied a conspicuous place in the development of the alloy steel industry, and had a wide acquaintance, both with steel makers and with consumers of alloy steel in the automotive industry. He was born in 1870 in Chillicothe, Mo., of Welsh ancestry. After his education in the schools in Columbus, Ohio, where his father was a contractor, he was employed for some time by the Columbus Bolt Works, of which he became assistant manager. In 1899 he with others formed the Columbus Vehicle Co., of which he was president and general manager. After disposing of his interest in that company five years later he served a year as sales agent for the Braeburn Steel Co., in Chicago. In 1906 he became general manager of the Canton Stamping & Enameling Co., Canton, Ohio, and later was elected president, a position which he held until his death. In 1913 Mr. Bebb and several associates acquired control of the Massillon Rolling Mill Co., operating a sheet mill plant at Massillon, and on its reorganization he became its president and general manager. In 1914 the same interests organized the Central Steel Co., of which Mr. Bebb became president and general manager. This company built a plant for the manufacture of alloy steel, which was placed in operation the following year. Associated with Mr. Bebb in the Central Steel Co. at its organization were F. J. Griffiths, who became vice-president and general superintendent, and Charles E. Stuart, the secretary and treasurer. The association of the three men in the company continued until Mr. Bebb's death. Under his leadership the company met with marked success and the plant expanded materially. Mr. Griffiths became president two years ago, when Mr. Bebb gave up that office because of poor health. Another affiliated interest was the National Pressed Steel Co., organized in 1916 with Mr. Bebb as president. In 1921 this company and the Massillon Rolling Mill Co. were merged with the Central Steel Co. under the latter's name.

RICHARD ELLIS BEBB

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DR. KARL GOLDSCHMIDT, head of Th. Goldschmidt, A. G., Essen, Germany, died on Jan. 4, following an operation from which he failed to rally. He was approaching his seventieth year. Long prominent in the business and scientific world, both here and abroad, on account of extensive chemical research and development work, he was regarded as a recognized authority, particularly in connection with processes for detinning scrap tin plate. In partnership with his younger brother, the late Prof. Hans Goldschmidt, inventor of the Thermit process, who died in 1923, Dr. Karl Goldschmidt carried on the enterprise founded by his father, and brought it to its present dominant position

among German industries. He was also one of the founders and original directors of the Goldschmidt Detinning Co., now the Metal & Thermit Corporation, 120 Broadway, New York. Endowed with rare vision and energy, Dr. Goldschmidt was exceedingly progressive in his social ideas. He took an active interest in the welfare of his employees, being instrumental in the establishment of old age and invalid pensions from which workmen with over 10 years of service were entitled to relief. On the celebration of his first 25 years of service as head of his firm, he set aside a large sum from his private fortune for the establishment of a suitable home for those of his employees who, after illness, might need a quiet place at which to rest and recuperate. It also served as a country club where employees could spend their vacations. Dr. Goldschmidt is survived by his widow, two sons and a daughter; his oldest son, Dr. Theodore Goldschmidt, succeeding as active head of the German firm.

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GEORGE M. WRIGHT, one of the founders of the Wright Wire Co., Worcester and Palmer, Mass., and its president and general manager until its absorption in 1919 into the Wickwire Spencer Steel Co., died at Worcester, Jan. 7, following a long sickness. He was born in Clinton, Mass., April 12, 1865. After receiving his education at Monson Academy and in a business college, he entered in 1882 the office of his father, George F. Wright, then master mechanic of the Clinton Wire Cloth Co., as a draftsman. He became particularly interested in the development of wire weaving machinery. In 1883 the Wright business was established on a small scale at Palmer to weave wire cloth, the elder Wright taking with him as partners his two sons, George and the late Herbert N. Wright. They designed and built their own special equipment. Then Samuel H. Colton, Worcester, entered the business, the name becoming the Wright & Colton Wire Cloth Co., and the Worcester works on Hammond Street was established and grew to be the headquarters of the business. Mr. Colton retired in 1902, and George M. Wright became treasurer of the company and, upon the death of his father, its president and general manager. The plant expanded rapidly, and wire mills were established at Palmer. One of his sons, George F., is head of the George F. Wright Steel & Wire Co. Mr. Wright was mayor of Worcester from 1912 to 1916.

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JOHN T. LING, Wilmette, Ill., died of an attack of acute indigestion while driving in Evanston, Ill., Jan. 2. Mr. Ling was sales manager of the Chicago Flexible Shaft Co., Chicago.

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JOHN CLEVELAND OSGOOD, president Victor American Fuel Co. and founder of the Colorado Fuel & Iron Co., Denver, died Jan. 4 at his home at Red Stone, Cal., at the age of 74 years. He retired as president of the Colorado Fuel & Iron Co. in 1903, during the contest for control between the John G. Gates and the Rockefeller interests. Mr. Osgood began as an office boy in a Providence cotton manufacturer's employ, later was clerk in a New York commission house, cashier in the First National Bank at Burlington, Iowa, from 1874 to 1877, and then became interested in coal mining. In 1882 he investigated the mining resources of Colorado and in 1887 organized the Colorado Fuel Co., later the Colorado Fuel & Iron Co.

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WILLIAM K. KENLY, for many years a prominent figure in the iron and steel business in Chicago, died Dec. 30 at Pasadena, Cal., at the age of 56. Before he retired from active business, a few years ago, he was head of the W. K. Kenly Co., Chicago. Prior to that he was purchasing agent Interstate Iron & Steel Co., president Merchants Steel & Supply Co., and secretary Templeton, Kenly & Co.

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FRANK W. SMITH, chairman of the official classification committee for the Eastern railroads, and formerly a resident of Evanston, Ill., died of heart disease in New York, Jan. 1.

BENJAMIN HUDSON RYDER, sales engineer American Steel & Wire Co., Chicago, died of heart failure at the Lakeside Hospital, Dec. 26. Mr. Ryder was born at Hudson, N. Y., Dec. 3, 1877. After completing a four-year course in an Eastern technical school, he entered the employ of the Pittsburgh Steel Co. He was with the American Steel & Wire Co. for 23 years. Three years ago he was elected a fellow in the American Institute of Electrical Engineers. He was a member of the Chicago Engineers Club and the Illinois Athletic and Union League clubs.

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GEORGE E. WOOD, organizer of the George E. Wood Tool Co., Plantsville, Conn., and since the sale of that concern to the Stanley Works, New Britain, its manager, died at the Meriden Hospital Dec. 31, following a paralytic stroke. He was 66 years old.

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CHARLES W. LUMMIS, one of the managers of the gas producer department of the Morgan Construction Co., Worcester, Mass., died Dec. 28 while undergoing an operation for the eyes at the hospital of the Mayo Brothers, Rochester, Minn. He was born in Philadelphia 45 years ago and in his early life was a mining engineer in Colorado and Wyoming. He joined the organization of the Scovill Mfg. Co., Waterbury, Conn., later joining the Morgan company as a mechanical engineer. He played an important part in the development of the company's line of gas producers. He was a member of the American Society Mechanical Engineers. His wife survives.

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JAMES E. MCGREGOR, manager of the Philadelphia office of the Crucible Steel Co. of America, dropped dead from acute dilation of the heart at the plant of the Ingersoll-Rand Co., Phillipsburg, N. J., on Dec. 30. He was 36 years old. He leaves a widow but no children.

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C. E. MCFARLIN, president William Powell Co., Cincinnati valve manufacturer, died on Jan. 1 of pneumonia. He was a native Cincinnatian and was for a number of years secretary of the Crane & Breed Mfg. Co., Cincinnati. He was elected head of the Powell company in 1912 and served in that capacity until his death.

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JOHN J. MCKENNA, assistant purchasing agent in charge of rolling mill material, American Bridge Co., Pittsburgh, died at his home in that city Jan. 9, following a period of about two years of declining health. Few in the steel business had a wider acquaintance than Mr. McKenna and his associates call him the best friend that his friends had. Born in Ishpeming, Mich., Oct. 7, 1865, he found employment with the Lassig Bridge Co., Chicago, in 1884. In 1889 he was appointed buyer and expeditor of shipments of steel. Following the absorption of the Lassig company by the American Bridge Co. in 1900, he went back to the Lassig shops. In 1902 he was transferred to Pittsburgh and in 1904 was appointed to the position he held at the time of his death.

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JAMES DUNCAN, president Duncan Foundry & Machine Co., Alton, Ill., president Illinois Stoker Co., principal owner Litchfield & Madison Railroad and former receiver St. Louis Coke & Iron Co., died in New York, Saturday night, Jan. 9.

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LOUIS S. LOUER, for the past eight years vice-president Engineering and Contracting Publishing Co., Chicago, died of heart failure Jan. 9 at his home, 39 East Schiller Street, Chicago. Mr. Louer had been connected with the technical publishing industry practically all of his life. He was born in Newcastle, Pa., June 11, 1872, and was graduated in mechanical engineering from Cornell University in 1894. For the past 24 years he had been located in Chicago, first as Western manager of *Engineering Record* and later with the F. W. Dodge Co. as Western manager.

## Industrial Notes

The J. Stevens Arms Co., a subsidiary of the Savage Arms Corporation, Utica, N. Y., has purchased the physical inventory, use of the corporate name, patents, trademarks, etc., of the Page-Lewis Co., Chicopee Falls, Mass., maker of rifles.

The Champion Spark Plug Co., Avondale and Upton Streets, Toledo, Ohio, is breaking ground for a new building, contract for which was recently awarded to Speiker and Co., Toledo. This second unit in the building program will be a duplicate in size and design of the present six-story building, which is about 60 x 150 ft. The new unit will be used largely for warehouse purposes for the present, but will be of such construction that machinery and equipment for manufacturing can be installed as needed. R. A. Stranahan is president.

The Equitable Meter & Mfg. Co., 444 First Avenue, Pittsburgh, has taken over the Equitable Meter Co. and has purchased the property formerly occupied by the Pittsburgh Model Engine Co. The company intends to move immediately to the Pittsburgh Model Engine plant at Homewood, Pa. There will be a considerable amount of new machinery purchased, and expansion is planned. The purchase of machinery will be under the direction of Mr. Messersmith, factory manager. The company manufactures meters and regulators for producers of artificial and natural gas.

The Lake Erie Engineering Corporation is the title by which the Buffalo Machine & Iron Corporation is now known. Located at 268 Perry Street, Buffalo, this company is a continuation of the business established in the early nineties and operated under the name of the Lake Erie Engineering Works. The original company manufactured marine engines and water works pumping engines. In recent years many sugar mills have been built. The company is prepared to furnish plate working tools and hydraulic presses. The Gray line of turret and plain head rotary shears and profilers are also offered, as well as improved lines for range boiler manufacturing. The equipment offered is suitable for railroad shops, boiler, tank, and structural shops, rubber or plastic molding plants. J. T. Dillon is president; other members of the organization include G. Harry Case, J. H. Williams, J. B. Smith and W. L. DeLaney.

The Barney Machinery Co., Inc., machine tools, hot and cold metal working machines, cranes and hoists, Union Trust Building, Pittsburgh, is the new title of the Laughlin-Barney Machinery Co. Incorporation is under the laws of Delaware.

Beals, McCarthy & Rogers, Inc., 50 Terrace, Buffalo, have taken over the mill and shop supply business of Walbridge & Co., as the latter company has decided to devote its entire efforts to the retail and builders' hardware departments in its new store at Court and Franklin Streets. Beals, McCarthy & Rogers, Inc., one of the oldest and largest mill and supply houses in the country, has been celebrating its centenary. During 1925 the company opened a new steel warehouse on a private switch at Elk and Katherine Streets. This will enable the company to expand the facilities at the Terrace.

The Manufacturers Mineral Co., 1107 West Idaho Street, Seattle, has been incorporated with capital stock of $50,000 to take over a business of two years' standing in non-metallic minerals for industrial purposes. There will be no change in ownership or management. The company handles principally colored marble chips for stucco, terrazzo flooring and cast stone trade, and a pure silica which is run in sizes suitable for the building trade as well as foundry, sand blast, etc.

The Hydraulic Steel Co., Cleveland, earned $165,373 net for the year ended Oct. 31, before interest on capital investment, as compared with $298,855 the previous year, according to the report of Thomas P. Goodbody, receiver. Decreased earnings are attributed to various items, including $26,345 extra charge for depreciation, $19,244 increase in legal and professional expenses, and $22,670 set aside for contingent increase in royalties. The receiver's current and other assets were $1,448,360, and the total assets were $8,307,394.

W. W. Vosper and Edward G. Kirby of Toledo have been appointed receivers by the Federal Court, as of Dec. 15, 1925, of the Toledo Milling Machine Co., 3640 Summit Street, Toledo, Ohio. It has not yet been decided whether the plant will be operated under the receivership or dismantled.

The Bohn Aluminum & Brass Corporation, Detroit, will devote a large part of its output to the production of a new patented aluminum piston. The company has recently completed plant extensions and the installation of additional equipment costing close to $350,000. It has contracts for piston requirements for the Chrysler, Peerless and Star automobiles.

The Jewett Refrigerator Co., Buffalo, has secured a contract from the General Electric Co., for the manufacture of large size refrigerator cabinets or boxes for electrically-operated refrigerators. The Jewett plant is running on a heavy production schedule, building cabinets also for the Kelvinator, Frigidaire, Serv-el and Copeland electric refrigerating equipment.

The industrial department of the St. Louis-San Francisco Railway reports a total of 401 new industries established along the lines of the company during 1925, representing a total plant investment of more than $20,000,000. The company has a total trackage of 5,400 miles, and the new industries were located in practically every district served by the railroad, the heaviest work being recorded in the oil districts in the mid-Continent fields. The figures for the past year show an increase of close to 25 per cent over those of 1924.

The Eberhard limestone quarries, near Catasauqua, Pa., have resumed operations following a shut-down for more than a year, the output being used for blast furnaces of the Reading Iron Co.

The Midland Steel Products Co., Cleveland, has received contracts for approximately 12,000 patented steel doors for railroad cars and will devote a considerable part of its capacity to this line in the future.

## Trade Changes

The Browning Crane Co., Cleveland, manufacturer of locomotive cranes and buckets, has opened a branch office in Pittsburgh. This new office is in conformity with the Browning policy of maintaining direct factory branches in industrial centers, to give better service to locomotive crane users. It will be in charge of D. C. Harris, who has long been associated with the company, and will be located at 1201 Peoples Bank Building.

The National Valve & Mfg. Co., Pittsburgh, has appointed the Ernest E. Lee Co., merchant engineer, 115 South Dearborn Street, Chicago, as district representative to cover the Middle Western territory, including Illinois south to Springfield, eastern Iowa, southern Wisconsin and northern Indiana.

Effective Jan. 1, the Southern Wheel Co., whose headquarters are in Pittsburgh, has opened a new office in Washington, at 818-819 Munsey Building, in charge of S. C. Watkins, special representative, who has been moved from Atlanta. The Atlanta office at 1513 Candler Building will be in charge of C. C. Cox.

E. B. Kelley Co., 130 West Forty-second Street, New York, has been incorporated, with capital stock of $250,000. The company, which has branches in Philadelphia, Newark, N. J., and Buffalo, has been in business approximately 20 years, specializing in concrete machinery and contractors' equipment. It represents the Jaeger Machine Co., Columbus, Ohio; Anchor Concrete Machinery Co., Columbus; Sasgen Derrick Co., Chicago; Blystone Mfg. Co., Cambridge Springs, Pa., and other manufacturers.

Effective Jan. 1, 1926, sales of the Jenkins Machine Co., manufacturer of wood-working machinery, Sheboygan Falls, Wis., will be handled exclusively by the Yates American Machine Co., Beloit, Wis.; Chicago, Ill.; Rochester, N. Y., and branch offices throughout the world. Since Jan. 1 the general offices and works of the Jenkins company have been located at Sheboygan Falls, Wis.

The Pennsylvania Crusher Co. has moved its general offices from the Stephen Girard Building to the new Liberty Trust Building, Broad and Arch Streets, Philadelphia. This business, started by George W. Borton in 1897, and continued as Borton & Tierney, a partnership, was incorporated as the Pennsylvania Crusher Co. in 1905, with headquarters in the Stephen Girard Building. The company specializes in steel crushers for coal, limestone, cement rock, etc.

The Howard C. Baker Co., consulting engineer, Toledo, Ohio, has recently moved to 128 South St. Clair Street. The building at the new location has been remodeled and added to and will afford double the floor space of the old quarters. The company specializes in heating and power plants. Howard C. Baker is president.

The Rogers-Brown Iron Co. has removed its general offices from Erie County Bank Building, Buffalo, to its plant office building, Hamburg Turnpike and South City Line. Rogers, Brown & Crocker Brothers, sales agents, will continue to have offices in the Erie County Bank Building.

The Davis Hansen Pump Co., Oshkosh, Wis., which is now specializing in automatic sprinkler systems for fire protection, has changed its corporate style to Davis Hansen Pump & Sprinkler Co.

# Machinery Markets and News of the Works

## PROSPECTS ENCOURAGING

### Considerable Machine Tool Business Pending and May Be Closed Soon

### Several Lists Pending—Steel Companies Probably Will Be Substantial Buyers of Equipment

NINETEEN TWENTY-SIX starts out promisingly for the machine tool industry. In actual orders placed the month so far has not been exceptional, but there are a good many inquiries pending, some of them for fair-sized lots of machines and indications point to early purchases.

The Brooklyn City Railroad had received bids on about 20 machines. The New York Central has inquired for a half dozen tools. Pending lists at Chicago include one from the Illinois Central, one from the Pullman Car & Mfg. Corporation and one from the Morgan-Gardner Electric Co. A Cleveland manufacturer of turret lathes has received an order for 15 machines from a Detroit automobile company.

Buying by automobile companies and the railroads will probably continue on the scale of the past few months, with the possibility that the railroads may expend more this year than last. Steel companies may also be larger buyers of equipment. Expansion programs of the Carnegie, Pittsburgh Crucible, Weirton and Bethlehem steel companies are under way or about to be started, involving expenditures of many millions of dollars, some of which will be for steel mill and machine shop equipment.

## New York

NEW YORK, JAN. 12.

WHILE sales of machine tools have been held up to some extent over the inventory period of the first week or two of the new year, prospects for good business during at least the first few months of 1926 are regarded by local sellers as particularly promising. Inquiries are fairly numerous and projects which were pending at the end of the year, but which have not yet been closed, are giving machine tool salesmen a considerable number of active prospects. The Brooklyn City Railroad has received quotations on a list of about 20 tools, which came out just before Jan. 1. The New York Central is asking for prices on a half dozen tools. The Pennsylvania Railroad is in the market for a 42-in. side-head, vertical turret lathe. Orders include the following: Ellis Adding-Typewriter Co., Newark, N. J., a vertical drill press, a bench lathe and a bench milling machine; Pneumatic Scale Corporation, Norfolk Downs, Mass., a 14-in. thread milling machine; Waltham Watch Co., Waltham, Mass., two 13-in. and one 16-in. geared-head lathes; Ingersoll-Rand Co., New York, a 10-in. vertical shaper and two 6-ft. radial drills.

Plans are under way for a four-story vocational school for boys, 80 x 190 ft., at Tinton and Wales Avenues and 145th Street, Bronx, New York, estimated to cost $1,150,000 with equipment, for the Board of Education, 500 Park Avenue. William H. Gompert, Flatbush Avenue Extension and Concord Street, Brooklyn, is architect.

John J. Dunnigan, 2382 Grand Concourse, New York, architect, has plans for a two-story automobile service, repair and garage building, 250 x 251 ft., on Webster Avenue, near 169th Street, to cost about $125,000 with equipment.

The Standard Gas Equipment Corporation, 22 East Forty-first Street, New York, has acquired the plant and business of Rathbone, Sard & Co., Aurora, Ill., manufacturers of gas ranges and parts, and will operate as a division of its organization. Plans for expansion are under way; the new acquisition will be developed to provide about double the former output. R. C. Hoffman, Jr., is president of the Standard company.

The Tarrytown Hygeia Ice Co., Tarrytown, N. Y., will erect a one-story plant, 70 x 128 ft., to cost $50,000 with equipment. Benton S. Russell, 70 East Forty-fifth Street, New York, is architect.

The Delaware, Lackawanna & Western Railroad Co., 90 West Street, New York, is arranging a fund of approximately $25,000,000, distributed over the next twelve months, for extensions and improvements, including rolling stock, line extensions and replacements, shop expansion, tools and equipment, etc.

Philip Stein, 1098 Grand Avenue, Brooklyn, manufacturer of commercial automobile bodies, has plans for a one-story forge and blacksmithing shop addition, 30 x 75 ft. Levy & Berger, 375 Fulton Street, are architects.

The Mark Iron Works, Inc., Third Avenue and Sixth Street, Brooklyn, has asked bids on a general contract for a six-story automobile service, repair and garage building, 60 x 95 ft., at 51-55 Lexington Avenue, New York, to cost $225,000 with equipment.

The Adirondack Power & Light Corporation, Amsterdam, N. Y., has disposed of a bond issue of $5,000,000, a portion of the fund to be used for extensions and improvements in power plants and system. Charles S. Ruffner is first vice-president.

The Procter & Gamble Co., Port Ivory, Staten Island, N. Y., has awarded a general contract to the H. K. Ferguson Co., Cleveland, for two one-story buildings to be equipped as furnace and generator plant and for hydrogen gas apparatus, estimated to cost $175,000. Headquarters are at Cincinnati. William C. Procter is president.

The New York Central Railroad Co., Grand Central Terminal, New York, has filed plans for a one-story addition to its repair shop on Mott Avenue, near 144th Street.

Officials of the American Car & Foundry Co., 165 Broadway, New York, have organized a subsidiary, the American Car & Foundry Motors Co., capitalized at $40,000,000. The new company will take over and operate the Fageol Motors Co., Kent, Ohio, manufacturer of motor buses and motor trucks, and the Hall-Scott Motor Car Co., Oakland, Cal., manufacturer of gasoline engines, etc. It proposes to expand operations for the production of gasoline-propelled cars for railroads. The J. G. Brill Co., Philadelphia, manufacturer of electric traction cars, is interested in the new company. W. H. Woodin is chairman of the board and C. S. Sale, president.

De Paoli Brothers, Inc., 338 West Thirty-eighth Street, New York, manufacturer of tile products, has awarded a general contract to George A. Glass, 70 East Forty-fifth Street, for its proposed three-story plant, 40 x 100 ft., to cost $70,000.

The Mount Vernon Charging Station, 43 North Third Avenue, Mount Vernon, N. Y., operating an electric storage battery charging plant, repair shop and garage, has plans for a one-story addition, 100 x 100 ft., to cost $38,000. Stern & Peyser, 12 East First Street, are architects.

The Staten Island Edison Corporation, Terminal Building, St. George, S. I., N. Y., is disposing of a preferred stock issue of $3,307,500, a portion of the fund to be used for extensions and improvements in power plant and system. J. I. Mange is vice-president.

The New York, New Haven & Hartford Railroad Co., Grand Central Terminal, New York, will erect a one-story repair shop at its Van Nest Avenue locomotive terminal

yards, Bronx. Henry R. Kent, 141 Broadway, New York, is architect.

The Brooklyn Edison Co., Pearl and Willoughby Streets, Brooklyn, has preliminary plans for a new equipment storage and distributing building, with automobile service, repair and garage building for company motor trucks, to cost in excess of $350,000 with equipment. -MacKenzie, Voorhees & Gmelin, 342 Madison Avenue, New York, are architects.

The Van Vlaanderen Machine Co., 2 Broadway, Paterson, N. J., manufacturer of textile machinery, has acquired the former machine shop of the McNab & Harlin Co., manufacturer of valves, etc., for some time past in receivership. The new owner will remodel the structure for the production of special textile loom equipment. Peter Van Vlaanderen is head.

The Simplex Universal Joint Co., Plainfield, N. J., manufacturer of automobile equipment, has acquired 5 acres fronting on the line of the Central Railroad of New Jersey at Flemington, N. J., for a new factory. Plans are under way for an initial one-story unit, 65 x 100 ft. Other structures will be built later.

The Public Service Electric & Gas Co., Terminal Building, Newark, N. J., has taken title to 37 acres at Clifton, N. J., as site for a proposed automatic power substation to be operated in conjunction with its generating plant now in course of erection on the Hackensack River at Kearny, N. J. It is reported to cost $300,000 with equipment. The company has filed plans for a two-story power house, 48 x 50 ft., at the foot of Duffield Street, Jersey City, N. J., to cost $75,000.

Liskovsky & Jacobson, Inc., Union City, N. J., recently organized to manufacture bed springs, etc., has leased a floor in the building at 68-70 Fleet Street, Jersey City, N. J., for operations.

The Federal Metal Bed Co., 816 Clinton Street, Hoboken, N. J., has filed plans for a one-story addition to cost about $24,000.

The Board of Education, West New York, N. J., plans the installation of manual training equipment in its proposed three-story high school at Broadway, Park Avenue, Eleventh and Twelfth Streets, to cost $650,000, for which bids will soon be asked on a general contract. William Mayer, 711 Bergenline Avenue, is architect.

The Warner-Quinlan Co., 79 Wall Street, New York, has arranged an appropriation of $350,000 for extensions and improvements to its asphalt refining plant at Warners, near Perth Amboy, N. J., including new buildings and equipment. Work has been started. The company recently disposed of a stock issue of $1,000,000, a portion of the fund to be used for other expansion and betterments.

The Nonpareil Toy & Novelty Co., 60-64 Union Street, Newark, contemplates extensions in its plant and the installation of additional equipment.

Igoe Brothers, Poinier Street, Newark, manufacturers of wire nails, etc., have taken out a permit to build a one-story addition at 181-5 Poinier Street.

The Industrial Plants Corporation, 25 Church Street, New York, will offer for sale at public auction the entire plant and equipment of the Clydesdale Motor Truck Co. at Clyde, Ohio, valued at about $750,000. The auction will take place on Jan. 19, starting at 11 a. m.

## Philadelphia

PHILADELPHIA, Jan. 11.

THE -John W. Watson Co., Twenty-fourth and Locust Streets, Philadelphia, manufacturer of automobile equipment and accessories, is asking bids on a general contract until Jan. 19 for a new one-story plant, 125 x 780 ft., to cost $250,000 with equipment. The Ballinger Co., Twelfth and Chestnut Streets, is architect and engineer.

Fire, Dec. 28, destroyed the five-story factory on Noble Street, Philadelphia, occupied jointly by the National Plating Co. and Samuel Barnett & Co., manufacturers of paper boxes and containers, with combined loss in excess of $185,000 including equipment. Both companies plan to replace their works.

The S. S. Wenzell Machine Co., Parkside Avenue and Fiftieth Street, Philadelphia, has disposed of its two-story plant on site, 150 x 220 ft., to a textile company for $90,000, and is said to be planning to remove the works to another location where the capacity will be increased.

The Cadillac Motor Car Co., 142 North Broad Street, Philadelphia, has asked bids on a general contract for an eight-story service, repair and maintenance building, to cost about $550,000 with equipment. Philip S. Tyre, 114 South Fifteenth Street, is architect.

The Pure Oil Co., Columbus, Ohio, has work in progress on additions to its refinery at Marcus Hook, Pa., with the installation of equipment to increase the capacity from 5000 to 10,000 bbl. per day. The works will be electrified and a new lubricating oil plant with capacity of 200 bbl. per day installed. It is purposed to complete the work in about 60 days. It will cost close to $2,000,000.

The Swatara Township School Board, Oberlin, Pa., plans the installation of manual training equipment in its proposed new high school, estimated to cost $110,000, for which plans are being drawn by C. J. Lappley, Parkside Building, Harrisburg, Pa., architect.

The Reading Iron Co., Reading, Pa., has been making extensions and betterments at its mill at Columbia, Pa., following the closing of the works on Dec. 19. Equipment replacements will be made. It is expected to resume operations at an early date.

The Gwilliam Mfg. Co., Camden, N. J., manufacturer of electrical conduits, etc., is considering rebuilding the portion of its plant destroyed by fire Jan. 2, with loss reported at $65,000 including equipment.

The Aldrich Pump Co., Allentown, Pa., has acquired the centrifugal pump business, including designs, patents, etc., of the Earle Gear & Machine Co., 4707 Stenton Avenue, Philadelphia, and will remove the department to its Allentown plant, where manufacture will be continued under the direction of Charles Fromm, who has been in charge of the centrifugal pump division of the Earle company. It is purposed to develop large production. W. H. Townsend is vice-president and general manager of the purchasing company.

The Carpenter Steel Co., Reading, Pa., is said to have plans under consideration for rebuilding the portion of its wire nail mill at North Reading, destroyed by fire Dec. 24, with loss reported at $150,000 including equipment. E. J. Poole is general manager.

Fire, Dec. 31, destroyed a portion of the concentrator plant at Lebanon, Pa., of the Bethlehem Steel Co., Bethlehem, Pa., with loss of $50,000 including equipment.

Joseph Hyman & Sons, Tioga and Livingston Streets, Philadelphia, iron and metals, have awarded a general contract to the John N. Gill Construction Co., City Centre Building, for a one-story and basement shop and storage addition, 120 x 200 ft., to cost $27,300.

The Pennsylvania Railroad Co., Broad Street Station, Philadelphia, has acquired the plant of the National Steel Construction Co., Bellwood, near Altoona, Pa., consisting of machine shop, mill, storage buildings and other structures on a 55-acre tract, and is said to be planning to use for new repair shops.

The Reading Railroad Co., Reading Terminal, Philadelphia, has work in progress on a new freight car repair shop at its general repair works at Reading, Pa., to cost in excess of $75,000. The company will also build a new coaling station here.

Plans have been completed for the establishment of a trade school for boys at the Tressler Orphans' Home, Loysville, Pa., operated by the United Lutheran Church, consisting of a two-story structure, 40 x 70 ft., to cost $40,000 with equipment. Frank W. Witmyer, 515 North George Street, York, Pa., will be in charge of the school. George E. Neff, York, is a member of the executive committee.

## New England

BOSTON, January 11.

SALES of machine tools in this district the past week were few. The trade, however, particularly those dealing in used as well as new machinery, is quite busy on prospects which give promise of early closing. A number of companies are planning on the replacement of several machines, and others contemplate opening new shops. The aggregate number of tools under negotiation is larger than that noted in several months. New England machine tool dealers in general are well occupied, but with orders taken outside of New England. A further increase in output is anticipated during the next month or two.

The Gould Towline Bumper Co., Inc., Bridgeport, Conn., has incorporated to manufacture automobile bumpers and accessories. It has an authorized capital of $100,000 and begins business with $61,000. Samuel C. Gould and S. Harry Gray, both of Bridgeport, are president and treasurer.

The Safe Pleasure Boats, Inc., Hartford, Conn., all steel boats, is constructing a one-story, 120 x 185 ft., plant in Elmwood, Hartford, adjoining the Whitlock Coil Pipe Co. Those financially interested in the company are George T. Jacocks, vice-president and manager Whitlock Coil Pipe Co.; E. A. Robinson, Metropolitan Life Insurance Co., Boston, and L. F. Walsh, Springfield, Mass.

## The Crane Market

NEW inquiry since the first of the year has been light, but the market has been moderately active in electric overhead cranes. Inquiry for locomotive cranes is light and but little is expected in this field for the next few weeks as it is too early for contractor purchasing and the railroads, in most cases, have not yet made their appropriations. The Otis Elevator Co., Yonkers, N. Y., which has closed on 19 small capacity cranes with two builders, has secured prices on about eight additional cranes, on which award is expected in a few days. Lockwood, Green & Co., New York, consulting engineers, are reported to be receiving bids on several cranes for a rayon plant to be erected in Tennessee. The 30-ton and 20-ton cranes for the New Haven railroad shops at Van Ness, N. Y., are expected to close in a few days and the Hiler Engineering Co., Brooklyn, N. Y., is understood to have awarded the two 1½-cu. yd. bucket handling cranes for a sewage disposal plant at Buffalo.

Among recent purchases are:

Great Northern Railroad, St. Paul, Minn., three locomotive cranes with ditching attachments, one with additional pile-driving equipment, from the American Hoist & Derrick Co.

Missouri Pacific Railroad Co., St. Louis, one standard ditcher from the American Hoist & Derrick Co.

Stone & Webster, Boston, a 75-ton, 64-ft. span, 4-motor electric traveling crane for the Western United Gas & Electric Co., Aurora, Ill., from the Niles-Bement-Pond Co.

City of Dayton, Ohio, a 10-ton, 60-ft. span, 3-motor overhead crane for a pumping station, from the Whiting Corporation.

Erie Railroad, New York, a 50-ton coach hoist from the Whiting Corporation.

Hercules Cement Co., Philadelphia, a 10-ton, 80-ft. span grab bucket crane from the Niles-Bement-Pond Co.

Ingalls Iron Works, Birmingham, a 10-ton, 80-ft. span, double trolley electric crane from the Niles-Bement-Pond Co.

A. T. Petrillo, stone yard, Mount Vernon, N. Y., a 7½-ton, 40-ft. span, electric overhead crane from the Northern Engineering Works.

Otis Elevator Co., Yonkers, N. Y., two 2-ton, 37-ft. span electric cranes from the Shepard Electric Crane & Hoist Co.; fourteen 3½-ton, 26-ft. span and two 2-ton, 27-ft. span, all 3-motor overhead cranes, reported purchased from a builder in the Northwest.

Western Sand Co., Columbus Ohio, a 30-ton used McMyler locomotive crane from Philip T. King, New York.

John C. Orr Lumber Co., Brooklyn, N. Y., a 15-ton used Brownhoist locomotive crane from Philip T. King, New York.

Hiler Engineering Co., Brooklyn, N. Y., reported to have purchased two 1½-cu. yd. bucket handling cranes for a garbage disposal plant in Buffalo from a builder in Milwaukee.

Pittsburgh Plate Glass Co., Pittsburgh, two special overhead cranes for its Creighton, Pa., plant, from the Alliance Machine Co.

Pittsburgh Steel Co., Monessen, Pa.; a 5-ton bucket handling trolley from the Alliance Machine Co.

Mesta Machine Co., West Homestead, Pa., a 15-ton, 140-ft. span, magnet handling crane from the Alliance Machine Co.

Carnegie Steel Co., Pittsburgh, two 15-ton, 67-ft. span, soaking pit cranes from the Morgan Engineering Co.

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Bids have been taken by Lockwood Greene & Co., 24 Federal Street, Boston, engineers for a new one-story press plant, a 75 x 150 ft. bar plant and a 73 x 240 ft. machine shop extension contemplated by the New Departure Mfg. Co., 269 North Main Street, Bristol, Conn.

The National Refrigerating Co., a subsidiary of the Winchester Repeating Arms Co., New Haven, Conn., has been formed to manufacture refrigerator apparatus in a portion of the parent company's plant.

William Knorr, Derby, Conn., has work nearing completion on a three-story factory, 70 x 140 ft., for the manufacture of metal bedsteads and will install equipment and begin operations at an early date.

The Boston & Maine Railroad Co., North Station, Boston, has plans for a coal storage and distributing plant at its Mystic Wharf Terminal, with conveying, hoisting, loading and other machinery. It will cost $450,000 with equipment.

Fire, Dec. 27, destroyed a portion of the plant of the Alhambra Rubber Co., Milford, Mass., with loss reported at $50,000 including equipment. It is planned to rebuild. Arthur Webb is one of the heads of the company.

The New England Power Co., 35 Harvard Street, Worcester, Mass., has plans for a new power house at Rowe, Mass., to cost $40,000. Superstructure work will begin soon.

The Mack Motor Truck Co., 673 Connecticut Avenue, Bridgeport, Conn., has filed plans for its proposed one-story service, repair and garage building to cost $140,000 with equipment.

The Cowan Truck Co., Holyoke, Mass., manufacturer of industrial lift trucks, has been merged with the Stuebling Truck Co., Cincinnati, manufacturer of kindred products, under the name of the Stuebling-Cowan Truck Co. The local plant, to be known as the Cowan Truck Division, will be continued and the Cincinnati works likewise maintained in operation. Expansion in present facilities is contemplated. The consolidation is said to represent assets of close to $1,000,000.

The American Soda Fountain Co., 282 Congress Street, Boston, has acquired property on Walnut Street, Watertown, 237 x 290 ft., as a site for a new plant for which plans have been drawn. It will cost about $60,000.

The Lux Clock Mfg. Co., Sperry Street, Waterbury, Conn., will ask bids at once for its proposed five-story and basement addition, 50 x 323 ft. A one-story power house will also be erected. Thomas M. Freney, Waterbury, is architect.

The Hotchkiss Brothers Co., Torrington, Conn., manufacturer of sash, doors and other millwork products, has awarded a general contract to the Torrington Building Co., for a three-story addition, 45 x 150 ft. W. E. Hunt, Torrington, is architect.

Fire, Dec. 28, destroyed a portion of the works of the Used Auto Parts Co., 795 Massachusetts Avenue, Roxbury, Mass. It is planned to rebuild.

A. H. Wells & Sons, Inc., East Aurora Street, Waterbury, Conn., manufacturer of seamless brass tubing, etc., has construction in progress on a new one-story tube mill, totaling about 16,000 sq. ft. of floor space. It is purposed to have the structure ready for equipment early in February. It is estimated to cost close to $100,000 with machinery.

The Warner Brothers Co., Cedar Street, Stamford, Conn., manufacturer of paper boxes and containers, is said to have plans under way for the rebuilding of the portion of its factory destroyed by fire Dec. 26, with loss estimated at $20,000 including equipment.

The Derby Gas & Electric Co., Derby, Conn., has taken bids on general contract for a three-story repair and equipment shop, 40 x 83 ft., with provision for a fourth story later, estimated to cost $50,000. R. W. Foote, 185 Church Street, New Haven, Conn., is architect.

## South Atlantic States

BALTIMORE, Jan. 11.

A PERMIT has been taken out by the Consolidated Gas, Electric Light & Power Co., Lexington Building, Baltimore, for an addition to its power plant on Gould Street, including the installation of boilers, coal towers, coal conveyors and other equipment, to cost $120,000. The company is arranging an expansion program for 1926 to cost $5,680,000, including the construction of a new steam-operated electric generating plant on the waterfront to cost $2,870,000; extensions and improvements in transmission system, $1,950,000; new shops, laboratories, etc., with equipment, $50,000; automatic power substations, $800,000; and other expansion.

Ovens, power equipment, conveying and other apparatus will be installed in the proposed addition to be constructed to the plant of the National Biscuit Co., 408 South Charles Street, Baltimore, to cost $100,000. Headquarters are at 85 Ninth Avenue, New York. J. R. Torrance is company architect.

The Jennings Furniture Co., Lenoir, N. C., has awarded a general contract to C. D. Smith, Hudson Street, for a four-story plant, 60 x 158 ft., with three-story portion, 75 x 100 ft., to cost about $35,000, exclusive of machinery. W. T. Beach is secretary.

The Potomac Edison Co., Cumberland, Md., is completing plans for a merger with the Penn-Central Power Co., Altoona, Pa. Extensions will be made in power facilities and transmission lines. M. F. Riley is president of the first noted company.

The Frank Mitchell Contracting Co., Scranton, N. C., has inquiries out for a steel guy derrick, about 5 tons capacity, with 90-ft. boom and 105-ft. mast.

The Martin Furniture Co., Hickory, N. C., is said to have preliminary plans for the rebuilding of the portion of its

factory destroyed by fire Dec. 28, with loss estimated at $100,000, including equipment.

The Carter Production Works, Wilmington, N. C., machinery dealer, has inquiries out for a number of steel split pulleys, from 4 to 48 in. diameter; also for a 25-hp. boiler, portable type, suitable for 150 lb. working pressure.

The Belton Mills, Belton, S. C., will soon begin the erection of a two-story hydroelectric generating plant with initial capacity of 2500 kw. J. E. Sirrine & Co., Greenville, S. C., are engineers.

The Tide Water Power Co., Wilmington, N. C., has disposed of a bond issue of $1,000,000, a portion of the proceeds to be used for extensions and improvements in power plants and system. The company also operated the Pinellas County Power Co., St. Petersburg, Fla.

Fire, Dec. 29, destroyed a portion of the plant of the Merchants' Fertilizer & Phosphate Co., Charleston, S. C., with loss reported at $225,000, including equipment. Plans for rebuilding are under consideration.

The Scandinavia Belting Co., 226 High Street, Newark, N. J., manufacturer of automobile brake lining, mechanical belting, etc., has awarded a general contract to the Southeastern Construction Co., 210 West Second Street, Charlotte, N. C., for a new one-story mill, 135 x 156 ft., at Charlotte, including power house. Machinery at the plant of the company at Paterson, N. J., will be removed to the new location and additional equipment installed. Lockwood, Greene & Co., 100 East Forty-second Street, New York, are architects and engineers. William A. Schrieber is general manager.

R. S. Graves, operating the Chagrin Valley Electric Co., Chagrin Falls, Ohio, and other electrical properties, has acquired the plant and system of the Home Electric Light Co., Lonaconing, Md., for $100,000. The new owner will continue operation and is considering extensions and the installation of additional equipment.

The Board of District Commissioners, District Building, Washington, is asking bids until Jan. 29 for a lathe, milling machine and bench saw.

The Kester Machinery Co., 430 Main Street, Winston-Salem, N. C., has inquiries out for a 350-kw. generator, direct-connected to Corliss type of uniflow engine, to be three-phase, 60-cycle, 220-volt type, with accessories.

The Bergen & Peck Co., Mendel Building, Savannah, Ga., is in the market for a steam locomotive, 24-in. gage.

The Interocean Oil Co., Baltimore, recently organized to take over the properties of the company of the same name in the Curtis Bay district, has begun the construction of a new cracking plant for gasoline production. Considerable new machinery will be installed. It is purposed to have the unit ready for service in March. Holden A. Evans is president.

The Broad River Power Co., Columbia, S. C., is arranging a fund of $2,500,000 for extensions and improvements in 1926, to include the construction of an additional unit at the steam-operated electric power plant at Parr Shoals, S. C., to cost $1,750,000, developing a total generating capacity of 57,000 hp.; addition to power substation at Spantanburg, S. C., to double the present rating, and extensions in the substation at Columbia, with additional transmission lines, etc.

The Hackley Morrison Co., 1708 Lewis Street, Richmond, Va., machinery dealer, has inquiries out for a 30-hp. oil engine with accessories; also a steel tank and tower, 100 ft. high, with capacity of 50,000 gal. or more.

The Lummis Cotton Gin Co., Columbus, Ga., manufacturer of cotton-ginning machinery, has completed the erection of a one-story addition, 130 x 220 ft., and will equip for increase in output.

R. P. Johnson, Wytheville, Va., machinery dealer, has inquiries out for a duplex steam pump, about 5-in. steam cylinder, 4-in. stroke, to operate at 600 lb. pressure; also for a portable band mill, light type; and one power-feed, single drum sanding machine.

The Eastern Shore Gas & Electric Co., Laurel, Del., is considering rebuilding the portion of its electric power plant at Ocean City, Md., destroyed by fire Dec. 29, with loss estimated at $50,000, including equipment.

The Lane Co., Altavista, Va., manufacturer of cedar chests and kindred products, has awarded a general contract to C. W. Hancock & Sons, Lynchburg, Va., for a one-story addition, to cost $125,000, with machinery. Lockwood, Greene & Co., 100 East Forty-second Street, New York, are architects and engineers.

The Columbus Electric & Power Co., Columbus, Ga., is disposing of a note issue of $2,500,000, a portion of the proceeds to be used for extensions and improvements in power plants and system. It has recently formed a merger with the South Georgia Public Service Co., Americus, and the Georgia-Alabama Power Co., Albany, Ga. The consolidated company will be operated as the South Georgia Power Co. The second noted company, South Georgia Public Service Co., will issue bonds for $2,339,000 for expansion and improvements, while the Georgia-Alabama company will arrange notes for $424,000 and bonds for $239,000 for similar purpose.

## Buffalo

BUFFALO, Jan. 11.

PRELIMINARY plans are under consideration by the Rochester Gas & Electric Corporation, 34 North Clinton Street, Rochester, for its proposed hydroelectric power plant on the Genesee River, near Caneadea, N. Y., to cost $1,800,000 with transmission system.

The Houde Engineering Corporation, 1392 West Avenue, Buffalo, manufacturer of automobile equipment, is completing the erection of an addition, 50 x 130 ft., for increased capacity.

The Barber Asphalt Co., Iroquois Works, 178 Walden Street, Buffalo, has filed plans for a one-story machine shop, 45 x 225 ft., to cost $30,000. Headquarters are in the Land Title Building, Philadelphia.

The Bradford Co., Cuba, N. Y., has extensions and improvements under way at its knife and cutlery plant to include the installation of additional equipment. The plant has been practically closed since partially destroyed by fire several months ago.

The Standard Oil Co., 26 Broadway, New York, operating the Tidewater Pipe Line Co., Bolivar, N. Y., has plans for a local gas-operated pumping plant and will have the structure ready for equipment at an early date.

The Syracuse Gas Light Co., Syracuse, N. Y., contemplates the construction of a steam power plant in connection with a proposed two-story gas generating plant to cost approximately $1,500,000 with machinery. The project will be in charge of the United Gas Improvement Co., Broad and Arch Streets, Philadelphia.

The Atlas Gypsum Co., 25 Broadway, Clarence Center, N. Y., is considering the construction of a new gypsum mining plant on local deposit, consisting of mine shaft and grinding and crushing mill, to cost 100,000 with equipment. W. H. Webster is vice-president, in charge.

Julius F. Stone, Columbus, Ohio, and associates have acquired a controlling interest in the Columbus-McKinnon Chain Co., Tonawanda, N. Y., manufacturer of steel chains, and will take possession at an early date. Plans for expansion are being considered. The company also operates plants at Columbus, Lebanon, Pa., and St. Catherines, Ont., with gross assets estimated at $3,000,000.

George L. Waitt, 492 Kensington Avenue, Buffalo, manufacturer of chaplets, etc., is said to be planning a one-story addition, to cost approximately $25,000, work to begin in the spring.

The Buffalo General Electric Co., Electric Building, Buffalo, will make extensions in its automatic power substations, including new plants of such type, to cost more than $100,000 with equipment.

## Pittsburgh

PITTSBURGH, JAN. 11.

WHILE little new business in machine tools has come out so far this year, orders against inquiries that developed the latter part of last year are coming along well. The steel industry promises to be a prolific source of business; the Weirton Steel Co. has started on its $15,000,000 plant expansion program, and the Pittsburgh Crucible Steel Co., a subsidiary of the Crucible Steel Co. of America, it is announced, will spend $2,000,000 on plant betterments at Midland, Pa. The Carnegie Steel Co. will make expenditures this year at other Pittsburgh district plants besides its Homestead works. Steel company outlays, as a rule, are directed more toward efficient than increased production, a lowering of producing costs being the prime object.

Contract has been let by the Pittsburgh & Lake Erie Railroad Co., Carson and Smithfield Streets, Pittsburgh, to the Truscon Steel Co., for a one-story car repair shop, 35 x 150 ft., at Newell, Pa., to cost $60,000 with equipment. A. R. Raymer is engineer.

The Penn Bridge Co., Claysville, near Washington, Pa., is said to have plans for rebuilding the portion of its steel fabricating plant destroyed by fire Dec. 31, with loss reported in excess of $500,000 including equipment. The

foundry, machine shop and adjoining buildings were destroyed; the structural department was saved.

The International Nickel Co., 67 Wall Street, New York, has awarded a general contract to the H. K. Ferguson Co., Cleveland, for two additions to its plant at Huntington, W. Va., each about 65 x 275 ft., to be used as a new strip mill and polishing plant, respectively. The present milling and chipping departments will be enlarged and additional equipment installed. Orders for machinery are being placed. The complete project will cost approximately $500,000.

The Fayette Utilities Co., Oak Hill, W. Va., recently chartered with a capital of $100,000, is said to be planning the operation of a power house in the Fayetteville mining district. The company is headed by C. W. Dillon and C. E. Mahan, Jr., both of Fayetteville.

The Eastern Sewer Pipe & Brick Co., Martinsburg, W. Va., has work in progress on its local plant, for an initial daily output of 100,000 brick. A power house will be constructed. Following operations, it is purposed to begin work on a new unit for vitrified sewer pipe manufacture, with daily output of about 100 tons. The complete project will cost $500,000. A number of orders have been placed for equipment and other machinery contracts will soon be given out. F. Vernon Aler is president.

The Imperial Coal Co., Johnstown, Pa., plans extensions and improvements in its Arnettville mining properties, near Morgantown, W. Va., recently acquired from the Whyel Coke Corporation. Electric power equipment and other machinery will be installed. The work will cost about $200,000.

The South Penn Oil Co., Metz, near Fairmont, W. Va., is contemplating rebuilding the portion of its local gasoline compressor plant, recently destroyed by fire with loss of $25,000 including equipment. Headquarters are at 545 William Penn Way, Pittsburgh.

The Wilkinsburg Ice Co., 208 Center Avenue, Wilkinsburg, Pa., will soon take bids for a new plant at Etna, Pa., to cost approximately $175,000 with machinery. H. G. Summ is general manager, in charge.

The wood-working and metal-working repair shop of the Berwind-White Coal Mining Co., Windber, Pa., was destroyed by fire Jan. 3. It is planned to rebuild.

The West Virginia-Pittsburgh Coal Co., Union Trust Building, Cleveland, is said to have plans under consideration for a new steel tipple, with picking tables, shaker screens, etc., at its Gilchrist mine, near Wellsburg, W. Va., to replace a structure recently burned.

## Detroit

DETROIT, Jan. 11.

WORK will soon begin on a one-story addition to the plant of the Chrysler Motor Corporation, Highland Park, Detroit, 285 x 800 ft., to cost $375,000 with equipment.

The Constantine Paper & Boxboard Co., Constantine, Mich., is said to be completing plans for rebuilding the portion of its factory recently destroyed by fire with loss estimated at $70,000. It is a subsidiary of the American Can Co., 120 Broadway, New York.

Edward Rickenbacker, vice-president Rickenbacker Motor Co., 1815 Cabot Street, Detroit, is reported to be at the head of a project to construct and operate a plant for the manufacture of aircraft at Pontiac, Mich. The Pontiac Board of Commerce is interested in the enterprise.

The Escanaba Paper Co., Escanaba, Mich., has plans for extensions in the power department at its mill, to include the installation of a turbo-generator, condensing apparatus and auxiliary equipment.

The Board of Education, Battle Creek, Mich., plans the installation of manual training equipment in its proposed high school, to cost $500,000, for which bids will be asked soon on a general contract. John D. Chubb, 109 North Dearborn Street, Chicago, is architect.

The American Standard Tool Works, Inc., Pontiac, Mich., is making extensions in its plant and will install additional equipment.

The E-Z-On Tire Cover Corporation, 366 Willow Street, Pontiac, Mich., Eugene E. Bigelow, president, manufacturer of automobile tire covers, is considering the construction of a new plant, to cost $70,000 with equipment. Work will begin in the spring.

The Detroit Edison Co., Detroit, has called a meeting of stockholders on Feb. 1 to approve an increase in capital from $85,000,000 to $122,000,000, a portion of the proceeds to be used for extensions in power plants and system. The company has plans for the installation of additional machinery at its power plant on the Trenton Channel and for equipment installations at the Marysville power house. Extensions will also be made in transmission lines.

Janke, Venman & Krecke, 612 Broadway Market Building, Detroit, architects, have completed plans for a three-story automobile service, repair and garage building, 120 x 160 ft., to cost $120,000 with equipment.

The Ira Lee Suction Cleaner Co., Detroit, manufacturer of vacuum cleaners, has selected a site at Bay City, Mich., for new works, and plans will be placed under way at once. The initial unit will have a floor space of 50,000 sq. ft. and will cost close to $75,000 with equipment. Other units will be erected later. The company proposes to remove its Detroit plant to this location.

The Board of Education, Flat Rock, Mich., is said to be planning the installation of manual training equipment in its proposed two-story high school, to cost $150,000, for which superstructure will soon begin. Aaron H. Gould & Son, Empire Building, Detroit, are architects.

The Thompson Cabinet Co., Ludington, Mich., has tentative plans for an addition to cost $50,000. It is said that work will begin in the spring.

The State Prison Commission, Lansing, Mich., has authorized the construction of a new steam power plant at the State prison at Jackson, to cost close to $500,000 with machinery. Harry L. Hulbert is in charge.

The Westinghouse Electric & Mfg. Co., Pittsburgh, has purchased property in Detroit for the erection of a building to house its district office, warehouses and service stations. This is in line with the policy of the company to bring these units together in each district. Construction will probably get under way in the next few months, and as floor space of 100,000 sq. ft. is necessary to take care of present requirements of the Detroit branch, a building of at least that size will be built. Single buildings now house the three operating units in Philadelphia, Chicago, Kansas City, Cincinnati, Indianapolis, Huntington, Los Angeles, Mineapolis, Seattle and Atlanta.

The Sheldon Lumber Co., Eckerman, Mich., has plans for the construction of a boiler house in connection with rebuilding its mill recently destroyed by fire, with loss reported at $100,000 including machinery.

## Cleveland

CLEVELAND, JAN. 11.

MACHINE tool orders have come out in fair volume since the first of the year, and considerable business is in prospect. A Detroit automobile manufacturer has purchased 15 turret lathes from the Warner & Swasey Co., Cleveland. This company also took an order from the Atlanta & West Point Railroad for a staybolt machine, and the Nickel Plate purchased two or three machines. The McNeil Boiler Works, Akron, Ohio, bought a 13 x 30-in. model B engine lathe from the Niles Tool Works. The Great Lakes Towing Co., Cleveland, has purchased an 1100 lb. steam hammer. The Packard Motor Car Co., Detroit, has bought a 6-spindle and a 5-spindle special milling machine for machining cylinder blocks. The Ford Motor Co. purchased three 2-spindle, drum type milling machines. The Briggs Mfg. Co., Detroit, bought a 10-in. vertical shaper.

The year begins with manufacturers' stocks of machine tools considerably reduced and deliveries extended to four to eight weeks on some lines of lathes, shapers and radial drills. One boring mill manufacturer is promising 60-day deliveres on small machnes and 90-day deliveries on large sizes.

Inquiry for steel plant equipment is more active. The Weirton Steel Co., Weirton, W. Va., has an inquiry out for a bridge crane and a car dumper, and has submitted preliminary inquiries for other equipment in connection with the erection of a new blast and open-hearth furnaces

The Electric Auto Lite Co., Toledo, Ohio, contemplates the erection of a factory addition. C. O. Mininger is president.

The W. S. Tyler Co., Cleveland, manufacturer of ornamental iron and bronze work has taken bids for a six-story addition, 82 x 218 ft. Proctor Patterson is president. The George S. Rider Co., 612 Century Building, Cleveland, is architect and engineer.

The Goodyear Tire & Rubber Co., Akron, Ohio, has placed contract with the Hunkin-Conkey Construction Co., Cleveland, for two one-story brick and steel factory buildings, 109 x 260 ft., and 100 x 120 ft., respectively.

The Aluminum Co. of America has placed contracts for the erection of a two-story, 55 x 300 ft. extension to the permanent mold department of its Cleveland foundry. Some new equipment will be installed.

The Dill Mfg. Co., Cleveland, has awarded contract for a four-story, 46 x 80 ft. addition to its stamping plant. The Withington-Roberts & Wright Co., Williamson Building, Cleveland, is the engineer.

The Miller Rubber Co., Akron, Ohio, will build a rubber reclaiming plant with 35,000 ft. of floor space at Kenmore, Ohio. Contract has been placed with the Austin Co., Cleveland.

The William E. Dee Co., Chicago, is having plans prepared for rebuilding a plant in Oak Hill, Ohio, recently burned, for the manufacture of fire brick, flue lining and sewer pipe. It will be three-stories, 75 x 300 ft. and include a boiler house.

Control of the Murray Ohio Mfg. Co., Cleveland, has been acquired by Cleveland interests and the plant will be operated independently of the J. W. Murray Mfg. Co., Detroit, with which it had been affiliated. C. W. Hannon, vice-president of the old company has been made president. Other officers include F. J. Hannon, vice-president; Frank H. Ginn, secretary and Thomas Coughlin, treasurer. -C. L. Bradley, J. W. Murray, Owen Locke and J. R. Murray are directors. The company's principal business is the manufacture of sheet metal parts for automobiles.

## Chicago

CHICAGO, JAN. 11.

PURCHASES so far in January have not been heavy, but dealers are busy submitting propositions on a large number of active inquiries, among which are three sizable lists. A motor manufacturer has purchased a centerless grinder and a polishing lathe. An electrical equipment maker has bought a 15-in. x 6-ft. motor-driven lathe, two motor-driven hack saws and four electric drills. A machine tool manufacturer has placed a 15-in. x 8-ft. geared-head lathe. Other individual purchases include a used 14-in. shaper, two special horizontal duplex drills, a 24-ft. sliding head drill and a ball bearing sensitive high speed drill. The International Harvester Co., Chicago, has bought two 16-in. and one 13-in. geared-head lathes from the Pratt & Whitney Co. The Bucyrus Co., South Milwaukee, bought a jig borer.

A list of motor-driven machine tools issued by the Illinois Central for its Paducah, Ky., shops follows: A double bench-type grinder, a swing frame grinder, two 84-in. heavy duty face grinding machines, 32-in. x 120-in. gap grinder for piston rods, two twist drill grinders, radius grinding machine, heavy duty internal grinding machine, two hydraulic wheel presses—one 500-ton capacity and the other 600-ton capacity, a vertical 100-ton general purpose hydraulic press, 25 lathes ranging in size from 12-in. to 36-in., 18 floor-type grinders ranging in size from 14-in. to 18-in., a universal grinder, a circular grinder, an 84-in. x 36-in. x 40-ft. frame planer, nine punch and shear items for boiler shop equipment, and the following standard lathes: 60-in. x 12-ft., 36-in. x 12-ft., 36-in. x 10-ft., 30-in. x 10-ft., and 30-in. x 6-ft. The Burlington is inquiring for a double-end axle lathe and an electric bench grinder.

The Pullman Car & Mfg. Corporation, Chicago, has issued the following list on which it is asking alternative bids, both with and without motor drive: Two die sinkers, one slotter, three planers, medium-size lathe, large lathe, large milling machine and a profiler. A list prepared by the Morgan-Gardner Electric Co., Chicago, includes a No. 2 milling machine, 24-in. drill press, an 18-in. x 6-ft. tool room lathe, a 2-in. capacity single-head bolt cutter, a notching press for disks up to 24 in. in diameter, a 36-in. 14-gage squaring shear, a centering machine 14 in. x 5 ft., and a worm thread miller with a capacity of 1-in. pitch diameter. Three motor-driven wet tool grinders were placed for the Tilden High School by the Chicago Board of Education. A Milwaukee forge company has bought a shaper.

In addition to a number of shop tools listed on page 90 of the Jan. 7 issue of THE IRON AGE, the Great Northern Railway Co., St. Paul, Minn., F. A. Bushnell, purchasing agent, has asked for prices on the following: One 12-in. or 14½-in. engine lathe with 6-ft. bed; one 2-hp., 60-cycle, three-phase, 220-volt constant speed motor; one 22-in. engine lathe with 10-ft. bed; one 10-hp., three-phase, 60-cycle, 220-volt constant speed motor; one 21-in. heavy pattern drill; one 2-hp., three-phase, 60-cycle, 220-volt constant speed motor; one 10-in. Stecher motor-driven drill press.

The Common Council, Muskatine, Iowa, has called a special election to approve a bond issue of $100,000 for the construction of a municipal electric light and power plant.

The Yellow Truck & Coach Mfg. Co., Chicago, has received an order from the Public Service Railway Co., Newark, N. J., for 333 motor coaches totaling $3,000,000. Deliveries will start in February and continue at the rate of 100 coaches a month.

The Waterway Paper Products Co. will build an addition to its plant at Kedzie Avenue and Thirty-second Street, Chicago, to cost about $260,000. It will be one-story, 80 x 300 ft., and 40 x 50 ft., and will consist of a warehouse, machine room additions and a power house. D. H. Burnham & Co., 160 North LaSalle Street, Chicago, are architects.

The C. E. Pederson Co., Hoyne Avenue and Eighty-second Street, Chicago, sash and door manufacturer, will build a plant to cost $300,000.

M. Sakaloff, 3933 Fifth Avenue, Chicago, will build a two-story iron-working shop, 50 x 123 ft., to cost $12,000. W. G. Langenheim, 39 West Adams Street, is architect.

The Lee Trailer & Body Co., 2343 South LaSalle Street, Chicago, manufacturer of automobile trucks and trailers, will move soon into its new manufacturing plant at Plymouth, Ind.

The St. Croix Falls Improvement Co., St. Croix Falls, Wis., operated by the Northern States Power Co., 76 East Third Street, St. Paul, Minn., has plans for the construction of a power dam and hydroelectric power plant on the St. Croix River.

The Neptune Meter Co., 565 Washington Boulevard, Chicago, manufacturer of water meters, recently purchased a four-story and basement building at 615 West Randolph Street and 130 North Jefferson Street.

The Stromberg Motor Devices Co., 68 East Twenty-fifth Street, Chicago, manufacturer of carbureters and other motor devices, has recently purchased 21 acres at the corner of South Fifty-fourth Avenue and West Sixteenth Street for $360,000. Plans are under way for a works which, when completed, will represent an expendifure of $1,500,000.

The Williams Foundry, Pennsylvania Avenue and Rice Streets, St. Paul, has been leased to David E. Anderson, who will open a foundry and machine shop for the manufacture of railroad frogs. The property has a frontage of 136 ft. on Rice Street, and 180 ft. on Pennsylvania Avenue, giving an area of almost 25,000 sq. ft.

The Chamberlain Metal Weatherstrip Co., 1644 Lafayette Street, Detroit, has completed plans for a two-story addition to its factory at Peru, Ill., to cost about $40,000 with equipment. Lockwood, Greene & Co., Buhl Building, Detroit, are architects and engineers.

The South Chicago Cold Storage Co., 3026 East Ninety-second Street, Chicago, recently organized with a capital of $1,000,000, has plans for a ten-story cold storage and refrigerating plant at 106th Street and the Calumet River, to cost $600,000 with machinery. Work will begin in the spring. B. K. Gibson, Chicago, is architect. The company is headed by Charles D. Atwater and Samuel B. Shirk.

The Moline Pressed Steel Co., Moline, Ill., has awarded a general contract to the Axel-Carlson Co., Peoples' Trust Building, for a one-story addition, 42 x 80 ft., primarily for steel enameling. Fred Lundahl is general manager.

The Illinois Power & Light Corporation, Merchants' Bank Building, Chicago, is disposing of a bond issue of $6,000,000, a porton of the fund to be used for extensions and improvements in power plants and system.

The National Biscuit Co., Evanston, Ill., with headquarters at 85 Ninth Avenue, New York, has plans for an addition to its machine shop on Keeney Street, for which bids will be asked on a general contract in February. It is reported to cost about $40,000 with equipment.

The Otter Tail Power Co., Fergus Falls, Minn., has selected a site for a new steam-operated electric power house at Washburn, N. D., for which plans will soon be drawn, to cost $80,000 with equipment.

The Chicago Rivet & Specialty Co., 4842 West Kinzie Street, Chicago, will proceed with the erection of a new plant at 1820 South Fifty-fourth Street, Cicero, Ill., 120 x 140 ft., to cost about $50,000.

The Heywood Mfg. Co., Fourth Avenue and Third Street, North, Minneapolis, Minn., is said to be contemplating an addition to its plant for the manufacture of paper boxes and containers, to cost approximately $45,000 with equipment. It is purposed to begin work in the spring. J. A. Heinrich is secretary and treasurer.

The Central Illinois Public Service Co., 130 South Sixth Street, Springfield, Ill., will build a one-story ice-manufacturing plant at Paris, Ill., to cost $43,000 with equipment. A similar plant will also be constructed at Carbondale, Ill., at like cost. Edward Coy is superintendent of buildings, in charge.

The Chicago, Burlington & Quincy Railroad Co., 547 West Jackson Boulevard, Chicago, is considering the construction of a new locomotive repair shop at its terminal yards at South Sioux City, Neb., with addition to the present engine house, reported to cost close to $90,000. Work will probably begin in the spring.

The Northwestern Public Service Co., Huron S. D., has applied for permission to construct electric light and power plants at Aberdeen and Mitchell, S. D., and at Columbus, Neb., to cost approximately $600,000 with equipment.

The Wood Brothers Thresher Co., Des Moines, Iowa, contemplates the erection of a new plant to take care of expanding business. J. H. Raymaker, consulting engineer of the company, is in charge of all details.

## Milwaukee

MILWAUKEE, JAN. 11.

BUSINESS in machine tools appears to be developing in a generally satisfactory way since the beginning of the year. Inquiry has improved materially in comparison with the last half of December and sales show a quickening. Users have come to recognize the growing difficulty in getting prompt deliveries and are beginning to anticipate future requirements well ahead. This is particularly true of the automotive industry, which apparently has large needs confronting it. Considerable buying for replacement has followed the annual inventory and overhauling period in machine shops.

The Beaver Mfg. Co., Milwaukee, has been incorporated with $300,000 authorized capital to succeed to the gasoline engine manufacturing business conducted for several years under a similar name by Thomas J. Neacy, who has now admitted his sons as stockholders and given them active direction of the business. The works are at 35-45 Twenty-fifth Street. Some changes and improvements are to be made for the production of larger engines for heavy duty in greater quantity. Thomas J. Neacy is president and treasurer; Paul Neacy, vice-president, and Eugene Neacy, secretary.

The Jenkins Machine Co., Sheboygan, Wis., manufacturer of special wood-working tools and machinery, has completed the transfer of its works and general offices to Sheboygan Falls, Wis., where it is occupying the former plant of the defunct Falls Motors Corporation. It has filled the major requirements of new equipment but is inquiring for miscellaneous items. A. G. Stuedemann is president and general manager.

The Felker Brothers Mfg. Co., Marshfield, Wis., which is completing an oil storage tank fabricating shop addition, has increased its authorized capitalization from $125,000 to $150,000 to accommodate the expansion. A. G. Felker is president and general manager.

The Hudson Mfg. Co., Minneapolis, Minn., will not rebuild its branch plant at DePere, Wis., which was ruined by fire some time ago, but will transfer the operation to Oshkosh, Wis., where it recently acquired the controlling interest in the C. A. Libbey Co. Part of the branch plant at Hastings, Minn., also will be shifted to Oshkosh. The Libbey line of barn equipment will thus be supplemented in production of hay tools, carriers, slings, pulleys and forks. It is also intended to add a complete sheet metal department at Oshkosh which will require a full complement of new equipment. E. T. Abendorth, who was manager of the DePere plant, has been appointed general manager of the Libbey division at Oshkosh.

The Industrial Controller Co., Milwaukee, which some time ago purchased an existing building at 306-312 Hanover Street, and moved its plant to the new location, has disposed of the former plant at 886 Greenbush Street to the O'Neil Duro Co., Milwaukee, a new corporation taking over the paint, varnish and lacquer manufacturing business of the O'Neil Oil & Paint Co., Milwaukee. Extensive changes will be made and new equipment installed. The building is 60 x 125 ft., two stories and basement, and will receive two additional stories within the coming four to five months.

The Brackett Machinery Co., Lancaster, Wis., a half interest in which has been acquired by the Madison, Wis., Tool & Stamping Co., has moved its equipment to Madison to conduct all production in the tool works. The principal product is an electric driven hollow chisel mortising tool for cabinet and millwork factories. A new design, a tenoning machine, also motor driven, will be placed in production at once. L. M. Dixon is vice-president and general manager.

The Valerius Refrigeration Corporation, Milwaukee, capital stock $50,000, has been organized by Theodore L. Valerius, Walter H. Bendfelt and Peter J. Hayes, attorney, to manufacture mechanical cooling devices, including soda fountains, domestic refrigerators, etc. Plant and offices will be established at once at 458 Jefferson Street. Mr. Valerius is president and general manager.

The Racine, Wis., Common Council has approved plans by Alvord, Burdick & Howson, engineers, 8 South Dearborn Street, for the proposed new $300,000 filtration unit of the municipal waterworks plant, and is asking bids until Jan. 30 for the complete work, including the filter plant and reservoir, filter equipment, wash water tank, wash water pump, meter, cast iron pipe, valves, etc. F. M. McElroy is superintendent of the water department.

The International Harvester Co. branch, Eau Claire, Wis., has plans for a new headquarters building, including offices, warehouse, storage and service department, 100 x 125 ft., one-story and basement, to cost about $125,000. Work will start about April 1.

The Oshkosh, Wis., Board of Industrial Education is calling for bids until Jan. 25 for the construction of a vocational school and recreational building designed by Auler & Jensen, local architects, and estimated to cost $350,000. B. K. Schriber is president of the board.

The A. F. Meckelberg Sash & Door Co., 760 Thirty-first Street, Milwaukee, let the general contract to Klug & Smith, engineers and contractors, 69 Wisconsin Street, for the reconstruction of the present plant and the erection of additions which, with equipment, will cost about $175,000. Work will start at once.

The Wisconsin Hydro-Electric Co., Amery, Wis., will rebuild its power dam and hydroelectric generating plant on the Namakogan River, near Trego, Wis. Ralph D. Thomas, 1200 Second Avenue, Minneapolis, is engineer.

Charles Rasmussen and R. T. Ingalls, owners of the Wisconsin Machinery Co., Racine, Wis., and builders of the Peerless line of power metal sawing machines, together with L. H. Taylor, formerly of the Greenfield Tap & Die Co., Greenfield, Mass., and the Williams Tool Corporation, Erie, Pa., and Clifford Peterson of the Clifford Peterson Tool Co., Chicago, are the incorporators and owners of the Chicago Pipe Threading Machine Co., 1615 Racine Street, Racine, Wis., which will manufacture a new pipe threading machine.

## Cincinnati

CINCINNATI, JAN. 11.

WHILE machine tool buying has been restricted mostly to single machines and sales have been only moderate in volume, inquiries have been unusually heavy. The disposition of firms in the general industrial field to purchase equipment is an encouraging sign. Local builders estimate that electrical manufacturers will spend approximately 15 per cent more for machine tools this year than last. Since business from this source in 1925 was below normal, the revival of interest in new equipment lends an optimistic tone to the market. Railroad inquiry, with the exception of the Illinois Central list for its Paducah, Ky., shops, is negligible. Automobile makers are active purchasers of machine tools, but are not buying on as extensive a scale as several months ago.

Production of machine tools has fallen off somewhat the past week. Although some companies cannot make deliveries in less than six to eight weeks or longer, other builders are not so fortunate in their volume of bookings.

An order for 12 lathes for a Chilean railroad was the largest of the week. Inquiry has been made by a Providence, R. I., company for 10 lathes, consisting of two 30-in., two 26-in., two 20-in., and four 18-in. A Georgia manufacturer is expected to buy seven lathes, while quotations on two 36-in. x 26-ft. lathes and two 18-in. lathes have been asked by a New Orleans firm. Another Southern inquiry calls for a 32-in. x 22-ft. lathe and three 18-in. heavy duty lathes. Two gap lathes will be purchased by a Syracuse, N. Y., manufacturer. Other lathe inquiries include two 18-in. machines for delivery in Little Rock, Ark., and two 24-in. machines for a New York concern for export. The Board of Education, Columbus, Ohio, will buy considerable equipment for the Central and South high schools of that city. Its list includes eight lathes, two drill presses, two grinders, two shapers and a milling machine.

The Nickel Plate railroad bought a 30-in. lathe from the Niles-Bement-Pond Co. The latter booked a similar machine from the Wood Newspaper Machinery Corporation, Plainfield, N. J., a 6-spindle miller and a 5-spindle miller from the Packard Motor Car Co., three 2-spindle millers from the Ford Motor Co., and an 800-lb. single frame steam hammer from the city of Seattle, Wash. A Grand Rapids,

Mich., manufacturer bought a 48-in. x 48-ft. planer from a local company. The John Steptoe Co. sold a 24-in. shaper for Louisiana delivery, a 20-in. shaper for a company in British Honduras, and a milling machine for a Detroit automobile manufacturer. The Cincinnati Planer Co. sold a 42-in. planer to a Kentucky concern. The Buick Motor Co. placed a small lathe order with a local builder the past week. Two orders for lathes, each for a single machine, were received from Germany. A Louisville manufacturer bought two thread millers, while an Evansville, Ind., company closed for a jig borer. The LeBlond Machine Tool Co., Cincinnati, bought a jig boring machine. The Progressive Tool & Engineering Co., Dayton, Ohio, bought a 6-in. vertical shaper.

Demand for used machinery is fairly good. The Beacon Visible Pump Co., Louisville, will offer approximately 15 used tools at auction on Jan. 12.

The Duro Pump Mfg. Co., Dayton, Ohio, will erect a four-story addition, 60 x 160 ft., which will increase its floor space 50,000 sq. ft. The plant, with equipment, will cost approximately $25,000. Schenk & Williams, Dayton, are the architects.

The Dreses Machine Tool Co., 227 West McMicken Street, Cincinnati, has awarded a general contract to the Austin Co. for a monitor-type factory on Spring Grove Avenue for the manufacture of radial drills and screw machinery which will cost approximately $100,000.

The Inland Mfg. Co., Dayton, Ohio, manufacturer of wood products and automobile steering wheels, is planning a factory addition for the manufacture of metal products. Frank Hill Smith, Inc., Winters Bank Building, Dayton, are the engineers.

The Max L. Israel Co., East Monument Street, Dayton, manufacturer of structural steel, has acquired two buildings at Emily and Louie Streets, formerly the car barns of the City Railway Co., and will move to the new location the latter part of January.

The Yardley Screen & Weather Strip Co., Columbus, Ohio, is having plans prepared for a one-story and basement factory, 150 x 350 ft. A. L. Yardley is president, and W. B. Yardley, secretary and treasurer.

The East End Sand & Gravel Co., Chillicothe, Ohio, is preparing plans for a gravel plant which will require belt conveyors, crushers, screens and a bucket elevator.

Preliminary plans are being considered by the Standard Sanitary Mfg. Co., Bessemer Building, Pittsburgh, for a new multi-story storage and distributing plant on site lately purchased at Broadway and Campbell Street, Louisville, to cost $275,000. Theodore Ahrens is president.

Bert Baldwin, Second National Bank Building, Cincinnati, architect, will ask bids soon for a proposed five-story addition, 75 x 100 ft., to the plant of the Cincinnati Mfg. Co., 1900 Gest Street, manufacturer of architectural iron and other metal products, to cost $100,000 with equipment. A. H. Shoenberger is president.

C. H. Ferber, Schmidt Building, Cincinnati, architect, has plans for a three-story automobile service, repair and garage building, 100 x 150 ft., at Lockland, Ohio, to cost $90,000 with equipment. C. Kiefer, Schmidt Building, is mechanical engineer.

The Builders' Structural Steel Co., Dayton, is arranging for the removal of its plant to a building on Emily Street, formerly occupied by the City Railway Power Co., where remodeling has been carried out to accomodate the new line. It is expected to increase the output at the new location. The Dayton Pressed Steel Co., is also arranging for removal to the same location, where it will occupy a portion of the new property of the Builders' Structural Steel Co.

Alexander M. Robinson, Georgetown, Ky., machinery dealer, has inquiries out for a clamshell bucket for handling sand, gravel, etc., a sand and gravel washing machine, Bonney type, and a belt conveyor, about 24 in. wide and 200 ft. long.

The Mogul Wagon Works, Inc., Hopkinsville, Ky., manufacturer of commercial automobile bodies, wagons, etc., is said to have plans for rebuilding portion of its plant destroyed by fire Dec. 28, with loss estimated at $150,000. The plant of the Forbes Mfg. Co., manufacturer of church furniture, on adjoining site, was also destroyed in the same fire, with loss reported at $200,000 including machinery. It will be rebuilt.

The Oneida Machinery Co., Oneida, Tenn., has work under way on a new building for a general machine repair shop, 75 x 140 ft., primarily for locomotive and other heavy repair operations. The Austin Co., Cleveland, is the general contractor. E. C. Coleman is secretary.

The Middlesboro Ice & Cold Storage Co., Middlesboro, Ky., is contemplating the installation of a new ice-manufacturing plant and is making inquiries regarding probable equipment and cost. Ewing Wilder is president.

E. W. Cooper, 509½ Deaderick Street, Nashville, Tenn., engineer, has inquiries out for a gasoline-driven, crawler type crane, with clamshell bucket, about 1-yd. capacity, for handling and loading sand and gravel; also for a belt conveyor, 24 in. wide, about 175 ft. long, suitable for sand and gravel distribution, and other equipment for a sand producing and distributing plant.

The Louisville Petroleum Co., Inter-Southern Building, Louisville, has work in progress on its proposed local oil and gasoline refinery and storage plant, estimated to cost $700,000 with machinery. W. M. Mitchell is company engineer.

## Indiana

INDIANAPOLIS, Jan. 11.

EXTENSIONS and improvements will be made in the power plant at the factory of the Mead-Johnson Co., Evansville, Ind., manufacturer of food products, to include the installation of two turbo-generators, condensing equipment, stokers, coal-handling and conveying machinery, etc., estimate to cost $90,000. W. E. Biggs, Holston Building, Knoxville, Tenn., is engineer.

The Board of Education, Bedford, Ind., will install a manual training department in the proposed two-story and basement addition to the local high school, for which plans are being prepared by the Elmer E. Dunlap Co., 1050 North Delaware Street, Indianapolis. Snider & Rotz, Merchants' Bank Building, Indianapolis, are mechanical engineers.

The Graham Brothers Truck Mfg. Co., Evansville, Ind., has awarded a general contract to the M. J. Hoffman Co., Evansville, for three one-story additions, each to comprise an individual operating unit. The expansion will cost about $100,000 with equipment.

The City Council, Rushville, Ind., will proceed with extensions and improvements in the municipal electric power plant, including the installation of additional equipment, to cost $28,000. Charles Brossman, Merchants' Bank Building, Indianapolis, is engineer.

William McMillan & Son, Inc., Bedford, Ind., has plans under way for a one-story addition to the limestone finishing mill, 135 x 600 ft., to cost $270,000 with machinery. Headquarters of the company are at 10 South La Salle Street, Chicago.

The Indiana Lamp Co., Connersville, Ind., manufacturer of lighting equipment and devices, will soon begin work on a one-story addition, to cost $65,000 with equipment. Ford, Bacon & Davis, Inc., 115 Broadway, New York, is engineer. W. F. Thomas is president.

The Polaris Electrical Refrigeration Co., now being organized at Logansport, Ind., has acquired the former plant of the Revere Automobile Co., idle for a number of years. The new company will remodel and improve the structure, and install machinery for the production of electric refrigerators.

The Vonnegut Hardware Co., 120 East Washington Street, Indianapolis, will ask bids this month for the erection of its proposed six-story and basement storage and distributing plant, 100 x 195 ft., reported to cost $275,000 with equipment. Vonnegut, Bohn & Mueller, Indiana Trust Building, are architects.

The Armour Packing Co., South Bend, Ind., meat packer, with headquarters at the Union Stock Yards, Chicago, is arranging to rebuild the portion of its cold storage and refrigerating plant destroyed by fire Jan. 5, with loss of $85,000, including equipment.

## St. Louis

ST. LOUIS, Jan. 11.

CONTRACT has been awarded by the Missouri-Pacific Railroad Co., Railway Exchange Building, St. Louis, to J. C. Duncan, Central National Bank Building, for a one-story equipment and material reclamation plant, 40 x 550 ft., and 65 x 120 ft., at Sedalia, Mo., to cost about $150,000 with machinery. E. A. Hadley is chief engineer.

The Tulsa Cottonseed Oil Co., Tulsa, Okla., has tentative plans for rebuilding the portion of its mill destroyed by fire Jan. 1, with loss reported at $175,000 including machinery.

The Standard Oil Co., Jefferson and Locust Streets, St. Louis, will soon begin the construction of a one-story machine shop on Folsom Street, 115 x 150 ft., to cost $65,000.

The Board of Education, Kansas City, Kan., plans the installation of manual training equipment in its proposed three-story Rosedale high school, 115 x 190 ft., to cost $200,000. Rose & Peterson, Brotherhood Building, are architects.

The Southwestern Light & Power Co., Lawton, Okla., is disposing of a bond issue of $1,000,000, a portion of the

fund to be used for extensions and improvements in power plants and system. Earl R. Ernsberger is president.

The Ora Rubber Products Co., 1318 Greeley Avenue, Kansas City, Mo., is completing arrangements for a new plant at Tulsa, Okla., for the manufacture of rubber tiles, flooring, etc., to cost $50,000, of which close to $32,000 will be expended for equipment.

The Missouri Farmers Association, Howard A. Cowden, secretary, Columbia, Mo., is contemplating the erection of a new two-story cold storage and refrigerating plant at Moberly, Mo., or vicinity, to cost $140,000 with machinery.

The South Lumber Co., Thornton, Ark., is considering rebuilding its saw mill and lumber plant recently destroyed by fire, with loss reported at $400,000 including machinery.

The Gann Ice Plant, El Dorado, Ark., has tentative plans for a one-story ice-manufacturing plant to cost approximately $35,000 with equipment.

The Oklahoma Gas & Electric Co., Oklahoma City, Okla., plans the construction of a one-story automatic power substation at Durant, Okla., to cost $50,000 including equipment. The work will be carried out in connection with transmission line extensions to cost more than $200,000. J. P. Owens is general manager.

The Coleman Lamp Co., Second and St. Francis Streets, Wichita, Kan., has awarded a general contract without competition to John Denny, 1451 North Lawrence Street, for a four-story and basement plant, 60 x 120 ft., to cost $110,000 with machinery. Headquarters are at 3617 South Ashland Street, Chicago. C. W. Coleman is president.

## Gulf States

BIRMINGHAM, Jan. 11.

PLANS are being arranged by the A. & J. Mfg. Co., Locust Street, Gadsden, Ala., manufacturer of gas stoves and ranges, for two one-story additions, 50 x 140 ft., and 80 x 130 ft. The expansion will cost about $26,000. J. C. Greene is secretary.

The Southern Ice & Utility Co., Texarkana, Tex., is arranging to rebuild the portion of its ice-manufacturing plant at West Broad and Oak Streets destroyed by fire Jan. 4, with loss reported at $35,000 including equipment.

The Pollock Paper & Box Co., Griffin and Broom Streets, Dallas, Tex., manufacturer of paper boxes, containers, waxed paper, etc., has awarded a general contract to the W. G. Davis Construction Co., Dallas, for a new two-story and basement plant, totaling 70,000 sq. ft. of floor space, estimated to cost $200,000. The present plant will be removed to the new location and additional machinery installed. Lawrence S. Pollock is president and general manager.

The Valley Electric & Ice Co., Harlingen, Tex., has plans for extensions and improvements in its ice-manufacturing plant at Weslaco, Tex., to cost $40,000 with machinery.

W. M. Smith & Co., Birmingham, machinery dealer, has inquiries out for a shear to handle 80-lb. rails and heavier; also for a 15-kw. generator; and one steam or gasoline driven, crawler type shovel.

The Highway Iron Products Co., Ligonier, Ind., will build a new branch plant on MacDuff Avenue, Jacksonville, Fla., for the manufacture of corrugated metal culverts, structural steel and kindred products, to cost $75,000 with equipment.

The Newport Tar & Turpentine Co., Pensacola, Fla., is said to be arranging for the early rebuilding of the portion of its plant destroyed by fire Jan. 2, with loss reported at $175,000 including equipment.

The Crane Co., 836 South Michigan Avenue, Chicago, will soon begin the erection of a two-story and basement factory branch and distributing plant, 100 x 150 ft., at San Antonio, Tex., to cost $90,000. August Herff & Co., San Antonio Loan & Trust Co. Building, is architect.

The Wylie Renovating & Supply Co., 1009 Ninth Street, Wichita Falls, Tex., has inquiries out for a number of sanding machines, electrically operated.

The City Council, Sumner, Miss., has tentative plans for rebuilding the municipal electric lighting plant and waterworks recently destroyed by fire, with loss of about $100,000 including equipment.

The Weir-Kilby Corporation, Birmingham, has been formed by officials of the Kirby Frog & Switch Co., Thirty-fifth Avenue, North, Birmingham, and the Weir Frog Co., Beach Street, Norwood, Cincinnati, to take over and consolidate the two interests. The new company has plans for extensions and improvements for larger production. W. M. Kilby is vice-president.

The Ford Motor Co., Detroit, has awarded a general contract to the O. P. Woodcock Co., Duval Building, Jacksonville, Fla., for the proposed addition to its assembling plant totaling about 45,000 sq. ft. of floor space, to cost $125,000 with equipment.

The Standard Asphalt Co., Spring Grove Street, Cincinnati, has acquired property at Winter Park, Fla., and contemplates the early erection of a new asphalt plant to cost $90,000 with machinery. The new works will include a boiler plant. The company is maintaining a Southern office in the Smith Building, Orlando, Fla. R. G. Patterson is general manager.

The Sheffield Rubber Products Co., Dallas, Tex., is establishing a plant in the building at Tyler and Davis Streets, for the manufacture of a special cushion automobile tire; a demountable rubber rim cushion and other hard rubber goods will also be made. The initial output will approximate 60 tires per day. Henry Sheffield is president.

Probst & Moseley, P. O. Box 81, Okeechobee, Fla., general contractors, are in the market for several light saw rigs and hoists, gasoline-driven.

J. W. Williamson, San Antonio, Tex., care of Atlee B. and Robert M. Ayers, Bedell Building, architects, is arranging for a new stone cutting and finishing plant to cost $30,000 with machinery. A list of machinery will soon be arranged.

The Davenport Lumber & Supply Co., Davenport, Fla., is considering the establishment of a new plant in the Davenport Terminals district for the manufacture of cement and concrete blocks, bricks and kindred products. It is also purposed to install a wood-working plant later. H. H. Brenner is president.

The Lakeland Cold Storage Co., Lakeland, Fla., recently organized, is arranging for a new cold storage and refrigerating plant to cost $115,000 with machinery. R. H. Alderman is president.

The Tampa Electric Co., Tampa, Fla., has preliminary plans for an addition to its power house on West Jackson Street, to include the installation of a 17,000-hp. turbo-generator, boilers, and auxiliary machinery. Extensions will be made also in the power substation on Eleventh Avenue. P. O. Knight is president.

## Pacific Coast

SAN FRANCISCO, Jan. 6.

BIDS have been asked by the Herman Safe Co., 216 Fremont Street, San Francisco, for a one and two-story plant, 137 x 137 ft., to cost $75,000 with equipment. T. Ronneberg, Crocker Building, is architect.

The Vel Rose Ice & Ice Cream Co., Lodi, Cal., recently organized with a capital of $500,000, has preliminary plans for the construction of a group of ice-manufacturing plants in northern California. A. M. Cezar and Angelo Palermo, both of Lodi, head the company.

The Bureau of Power and Light, 207 South Broadway, Los Angeles, will begin work at an early date on the first unit of the proposed steam-operated municipal power plant at San Pedro Harbor, reported to cost $2,500,000 with equipment. H. C. Gardett is chief of power construction, in charge. Plans are also being completed for the erection of three two-story automatic power substations, to cost approximately $325,000 with machinery.

The Board of County Supervisors, Martinez, Cal., will proceed with the construction of a one-story machine shop, 65 x 125 ft., on a 3-acre tract in the Fairview district. A one-story service and garage building for county motor trucks, 50 x 200 ft., will also be built.

The City Council, San Diego, Cal., has approved an appropriation of $18,000 for the purchase of a hoisting crane for harbor service at municipal pier No. 2.

The Pacific Gas & Electric Co., 245 Market Street, San Francisco, has authorized plans for extensions and improvements in its power substation at Sacramento, Cal., estimated to cost $200,000 with machinery.

The Boyle Mfg. Co., 5100 Sante Fe Avenue, Los Angeles, manufacturer of steel barrels, drums, galvanized tubs, etc., will break ground in March for its proposed new plant on a 5-acre tract, consisting of a group of one-story, saw-tooth roof structures, to cost $200,000 with equipment.

The Western Waxed Paper Co., East Sixty-first Street, Los Angeles, will proceed with the erection of a one-story addition, 30 x 150 ft., to cost $40,000. Headquarters are at Oakland, Cal.

The City Council, Aberdeen, Wash., is reported to be considering the construction of a municipal hydroelectric generating plant on the Wynooche River, to cost approximately $2,000,000 with transmission system. It is purposed to call a special election in March to vote bonds.

E. Taylor Gardner, 3320 North Tenth Street, Tacoma, Wash., architect, has plans for a multi-story automobile

service, repair and garage building, to cost $400,000 with equipment.

The George T. Mickle Lumber Co., Portland, Ore., with plant on North Portland Harbor, has preliminary plans for a new pulp and paper mill on adjoining site, to cost close to $750,000 with machinery. A. W. Miller is vice-president and general manager.

Hobbs, Wall & Co., Fife Building, San Francisco, operating a lumber mill at Crescent City, Cal., have preliminary plans for extensions and improvements, including a new planing mill with all machinery electrically operated, installation of additional machinery in present buildings, extensions in electric light and power plant and additional generator, boiler and auxiliaries. The entire project will cost about $300,000.

The city of Seattle, Wash., has purchased an 800-lb. steam hammer. The Lulting Machine Works, Los Angeles, has bought a 1½-in. x 18-in. turret lathe from the Pratt & Whitney Co. and the latter company has sold to the Mechanical Appliance Co., Los Angeles, a bench drill, a hand screw machine, a 2-spindle vertical drill, a toolmakers' lathe, a turret lathe and a bench milling machine. Goodman Brothers, San Francisco, have bought a turret lathe.

## Canada

TORONTO, JAN. 11.

MACHINE tool dealers and builders in this territory are optimistic regarding future business. At present the majority of manufacturers are busy and are carrying fairly numerous orders for deliveries before spring. Buying interests are again entering the market, but the greater part of current business is in single tools, with occasional inquiries for a half dozen. Several industrial plants are under construction, for which tools and equipment still have to be purchased, while other plants are in prospect of construction within the next few months. The automotive industry is buying in a small way, and there is a steady demand for lathes, bench machines and miscellaneous tools for repair plants. Small tools are also in strong demand.

Munro Brothers, Oak Avenue and Burge Street, Hamilton, Ont., manufacturers of stove pipe sheet metal specialties, etc., have work under way on the erection of a factory. Equipment will be purchased.

J. W. McCutcheon, 166 Athol Street East, Oshawa, Ont., will rebuild a cement plant destroyed by fire and is interested in equipment.

R. S. and W. S. Lea, 340 University Street, Montreal, are receiving bids until Jan. 22 for the erection of a hydro-electric power plant at Coaticook, Que., to cost $180,000.

The Executive Committee of the Council, Montreal, is in the market for a 1900-hp. motor and starting equipment for a 30,000,000 gal. per day electric pump.

The Ontario Malleable Co., Ltd., Oshawa, Ont., has been acquired by Neil R. Sinclair and associates, Toronto and New York. Total assets of the company are about $1,000,000 and it is understood the sale was a cash transaction. Mr. Sinclair and associates recently acquired control of the McKinnon Industries, Ltd., of St. Catherines and Buffalo, and also of the J. H. Williams Co., Ltd., and it is understood that all these companies will in future be operated under one management.

The National Steel Car Corporation, Hamilton, Ont., will begin the manufacture of six-wheel buses. The vehicles will be assembled in a department organized for that purpose and bodies for the buses will also be turned out at the Hamilton works.

The Canadian National Railways will rebuild the roundhouse at Oxford Junction, N. S., to replace one recently destroyed by fire with loss of $75,000.

The Thunder Bay Paper Co., Ltd., is having plans prepared for a newsprint mill at Port Arthur, Ont., at a cost of $1,000,000.

Cutten & Foster, 236 Sherbrooke Street West, Montreal, manufacturers of automobile accessories, curtains, tops, etc., have awarded contract for foundations for new factory on Dorchester Street to G. Martel, 5626 Park Avenue.

G. Ballantyne, 313 Pitt Street East, Windsor, Ont., has work under way on a machine shop and boiler room. S. E. Dinsmore Co., Wyandotte Street East, has the general contract.

T. S. Scott, city engineer, Niagara Falls, Ont., is in the market for complete equipment for a machine shop at the municipal paving plant.

The Hinde & Dauch Paper Co. of Canada, 43 Hanna Street, Toronto, has selected a site at Trenton, Ont., for the erection of a factory.

The Goodyear Tire & Rubber Co., Bowmanville, Ont., has awarded contracts in connection with $25,000 addition.

The Cobalt Contact Co., which is developing the old Cobalt Contact, Green Meehan, Red Rock, Law and other mining properties at North Cobalt, Ont., will place contracts immediately for the superstructure for a new mill. J. M. C. Dunlop is in charge of the properties, and Joseph Houston is consulting engineer.

### Western Canada

The Manitoba Pulp & Paper Co., Winnipeg, Man., has awarded contract to the Carter-Halls Allinger Co., Winnipeg, for the erection of its plant at Fort Alexander, Man., to cost $1,000,000. M. M. Turner, resident engineer, states that because paper has to be put on the market by Dec. 1, 1926, it has been impossible to call for tenders in the regular way. Arrangements for the construction of a power line to the mill site have been completed and the Canadian National Railways' spur line to the site is nearing completion. Contracts for machinery and equipment have not yet been awarded.

The Asser Diesel Engines, Ltd., Vancouver, B. C., financed privately by local capital, will establish a plant at a cost of $100,000 for the manufacture of an improved type of Diesel engine. Sydney Asser is organizer and manager.

The Wallace Foundry Co., Vancouver, B. C., now operating a steel and bronze furnace, will add a new electric furnace to its equipment at a cost of $25,000. Other improvements will also be made to take care of the increase in business.

The main building of the Prince Rupert Spruce Mills at Seal Cove, near Prince Rupert, B. C., was destroyed by fire Jan. 4 with a loss of several hundred thousand dollars. This building was saved when the dry kiln, box factory and a large quantity of lumber were destroyed by fire Nov. 14, with a loss of $300,000. J. A. Smith, Vancouver, B. C., is the owner.

## Foreign

THE American-Belgian Chamber of Commerce in Belgium, 48 Rue de Naples, Brussels, Belgium, has received an inquiry, Reference 235, from a Belgian company in the market for American machinery for the production of oil-cloth and linoleum, flat bed type.

The International Oxygen Co., 796 Frelinghuysen Avenue, Newark, N. J., manufacturer of oxy-acetylene welding equipment, etc., is said to have closed arrangements with the Soviet Government, Russia, for the construction of an initial group of nine welding plants in industrial centers of that country. The company will carry out the project in cooperation with the Russian Metal Syndicate, a new organization to be formed under the name of the Russian-American Gas Co., with capital of $500,000, each company to hold an equal interest. A. A. Heller, treasurer and general manager of the International company, is now abroad arranging details and will return in February.

The Melbourne Street Railway System, Melbourne, Australia, plans the construction of car repair and equipment shops at Preston, in connection with a general expansion program now in progress. The plant will cost $250,000. The entire program will cost close to $2,000,000.


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# Current Metal Prices

**On Small Lots, Delivered from Stocks, New York**

THESE prices are given for the convenience of small-lot buyers whose requirements do not run into mill-size orders.

Only base prices can be listed in some cases, due to limits of space; other items of a given group are deducible from the base price.

**The prices which are quoted below are those at which small lots may be bought, whether from jobbers' or other stocks.**

**Complete market reports and prices on large shipments from mills will be found elsewhere under "Iron and Steel Markets" and "Non-Ferrous Metals."**

### Bars, Shapes and Plates

| | Per Lb. |
|---|---|
| Bars: | |
| Refined iron bars, base price | 3.24c. |
| Swedish charcoal iron bars, base | 7.00c. to 7.25c. |
| Soft steel bars, base price | 3.24c. |
| Hoops, base price | 4.49c. |
| Bands, base price | 3.99c. |
| Beams and channels, angles and tees, 3 in. x ¼ in. and larger, base | 3.34c. |
| Channels, angles and tees under 3 in. x ¼ in. base | 3.24c. |
| Steel plates, ¼ in. and heavier | 3.34c. |

### Merchant Steel

| | Per Lb. |
|---|---|
| Tire, 1½ x ½ in. and larger | 3.30c. |
| (Smooth finish, 1 to 2½ x ¼ in. and larger) | 3.65c. |
| Toe-calk, ½ x ⅜ in. and larger | 4.20c. |
| Cold-rolled strip, soft and quarter hard | 6.25c. |
| Open-hearth spring steel | 4.50c. to 7.00c. |
| Shafting and Screw Stock: | |
| Rounds and hex. | 4.00c. to 5.00c. |
| Squares and flats | 4.50c. to 5.50c. |
| Standard tool steel, base price | 12.00c. |
| Extra tool steel | 15.00c. to 18.00c. |
| Special tool steel | 20.00c. to 23.00c. |
| High-speed steel, 18 per cent tungsten | 70c. |

### Sheets

*Blue Annealed*

| | Per Lb. |
|---|---|
| No. 10 | 3.89c. |
| No. 12 | 3.94c. |
| No. 14 | 3.99c. |
| No. 16 | 4.09c. |

*3ox Annealed—Black*

| | Soft Steel C. R. One Pass Per Lb. | Long Terne Sheets Per Lb. |
|---|---|---|
| Nos. 18 to 20 | 3.95c. to 4.10c. | 5.75c. |
| Nos. 22 and 24 | 4.20c. to 4.35c. | 5.90c. |
| No. 26 | 4.25c. to 4.40c. | 6.05c. |
| No. 28* | 4.35c. to 4.50c. | 6.35c. |
| No. 30 | 4.55c. to 4.70c. | 6.85c. |

*Galvanized*

| | Per Lb. |
|---|---|
| No. 14 | 4.45c. to 4.60c. |
| No. 16 | 4.60c. to 4.75c. |
| Nos. 18 and 20 | 4.75c. to 4.90c. |
| Nos. 22 and 24 | 4.90c. to 5.05c. |
| No. 26 | 5.05c. to 5.20c. |
| No. 28* | 5.35c. to 5.50c. |
| No. 30 | 5.85c. to 6.00c. |

*No. 28 and lighter, 36 in. wide, 20c. higher per 100 lb.

*Welded Pipe*

| *Standard Steel* | Black | Galv. | *Wrought Iron* | Black | Galv. |
|---|---|---|---|---|---|
| ⅛ in. Butt | 46 | 29 | ⅛ in. Butt | 4 | +19 |
| ¼ in. Butt | 51 | 37 | ¼ in. Butt | 11 | + 9 |
| 1-3 in. Butt | 53 | 39 | 1-1½ in. Butt | 14 | + 6 |
| 2½-6 in. Lap | 48 | 35 | 2-in. Lap | 5 | +14 |
| 7 & 8 in. Lap | 44 | 17 | 3-6 in. Lap | 11 | + 8 |
| 11 & 12 in. Lap | 37 | 12 | 7-12 in. Lap | 3 | +16 |

### Bolts and Screws

Machine bolts, cut thread, 40 and 10 per cent off list
Carriage bolts, cut thread, 30 and 10 per cent off list
Coach screws, 40 and 10 per cent off list
Wood screws, flat head iron,
80, 20, 10 and 10 per cent off list

### Steel Wire

| Base Price† on No. 9 Gage and Coarser | Per Lb. |
|---|---|
| Bright, basic | 4.25c. |
| Annealed, soft | 4.50c. |
| Galvanized, annealed | 5.15c. |
| Coppered, basic | 5.15c. |
| Tinned, soft Bessemer | 6.15c. |

†Regular extras for lighter gage.

### Brass Sheet, Rod, Tube and Wire

BASE PRICE

| | |
|---|---|
| High brass sheet | 19⅛c. to 20⅛c. |
| High brass wire | 19⅝c. to 20⅝c. |
| Brass rods | 16⅞c. to 17⅞c. |
| Brass tube, brazed | 27⅛c. to 28⅛c. |
| Brass tube, seamless | 23¾c. to 24¾c. |
| Copper tube, seamless | 24¼c. to 25¼c. |

### Copper Sheets

Sheet copper, hot rolled, 22½c. to 23½c. per lb. base.

Cold rolled, 14 oz. and heavier, 3c. per lb. advance over hot rolled.

### Tin Plates

| Bright Tin | | | Coke—14x20 | | |
|---|---|---|---|---|---|
| | Grade "AAA" Charcoal 14x20 | Grade "A" Charcoal 14x20 | | Prime | Seconds |
| IC | $11.25 | $8.85 | 80 lb. | $6.15 | $5.90 |
| IX | 12.85 | 10.85 | 90 lb. | 6.30 | 6.05 |
| IXX | 14.40 | 12.55 | 100 lb. | 6.45 | 6.20 |
| IXXX | 15.75 | 13.85 | IC | 6.65 | 6.40 |
| IXXXX | 17.00 | 15.05 | IX | 7.85 | 7.60 |
| | | | IXX | 9.00 | 8.75 |
| | | | IXXX | 10.35 | 10.10 |
| | | | IXXXX | 11.35 | 11.10 |

### Terne Plates

14 x 20

| | |
|---|---|
| IC—8-lb. coating | $7.75 to $8.00 |
| IC—20-lb. coating | 10.25 to 10.50 |
| IC—30-lb. coating | 12.00 to 12.50 |
| IC—40-lb. coating | 13.65 to 13.75 |
| Fire-door stock | 10.50 |

### Tin

| | |
|---|---|
| Straits, pig | 65c. to 65½c. |
| Bar | 69c. to 69½c. |

### Copper

| | |
|---|---|
| Lake ingot | 15 c. |
| Electrolytic | 14¾c. |
| Casting | 14½c. |

### Spelter and Sheet Zinc

| | |
|---|---|
| Western spelter | 9¾c. to 10c. |
| Sheet zinc, No. 9 base, casks | 13¼c.; open, 13¾c. |

### Lead and Solder*

| | |
|---|---|
| American pig lead | 10¼c. to 11¼c. |
| Bar lead | 12¼c. to 13¼c. |
| Solder, ½ and ½ guaranteed | 40c. |
| No. 1 solder | 37c. |
| Refined solder | 30½c. |

*Prices of solder indicated by private brand vary according to composition.

### Babbitt Metal

| | |
|---|---|
| Best grade, per lb. | 68c. to 72c. |
| Commercial grade, per lb. | 30c. to 35c. |

### Antimony

| | |
|---|---|
| Asiatic | 26½c. to 27½c. |

### Aluminum

| | |
|---|---|
| No. 1 aluminum (guaranteed over 99 per cent pure), ingots for remelting, per lb. | 30c. to 30½c. |

### Old Metals

Business is fair and values show little change. Dealers' buying prices are as follows:

| | Cents Per Lb. |
|---|---|
| Copper, heavy crucible | 12.00 |
| Copper, heavy wire | 11.75 |
| Copper, light bottoms | 9.50 |
| Brass, heavy | 7.25 |
| Brass, light | 6.25 |
| Heavy machine composition | 9.00 |
| No. 1 yellow brass turnings | 8.50 |
| No. 1 red brass or composition turnings | 8.00 |
| Lead, heavy | 8.00 |
| Lead, tea | 6.00 |
| Zinc | 5.25 |
| Cast aluminum | 19.50 |
| Sheet aluminum | 19.50 |